Journal of the
Indian Medical Association

VOL. XVI, No. 9 CALCUTTA JUNE, 1947

INVESTIGATIONS INTO AN OUTBREAK OF EPIDEMIC DROPSY

K. MITRA
AND
K. K. P. NARASINGA RAO
(*From the Department of Food, Government of India, New Delhi*)

INTRODUCTION

Within the last 25 years many papers have been published on epidemic dropsy, notably by workers from the Calcutta School of Tropical Medicine and the All-India Institute of Hygiene and Public Health. These have dealt with the etiology and epidemiology of the disease, the laboratory methods used in studying it and the clinical findings very often related to planned experiments. The investigations reported in the present paper were undertaken to discover the causes of a sudden outbreak of bowel complaints associated with swelling of the extremities. This outbreak, which had very rapidly incapacitated more than 100 employees in a certain railway system, was at first thought locally to be due to beriberi and was ascribed to the bad quality of the rice ration supplied.

In about a week's time from the date of the first appearance of the disease, investigations were started at the first centre of outbreak and extended by visits to 4 other railway colonies which were affected. The work of an epidemiologist very closely resembles that of a criminologist who has to trace the culprits responsible for a crime, using the available clues, with interviews and *ad hoc* enquiries. On prima facie evidence, the outbreak seemed to be caused by some common article of food or drink; otherwise bowel troubles of sudden onset and severity could not be accounted for. Milk and water, the two traditional culprits in all bowel complaints, were ruled out since cases occurred in five railway colonies separated by long distances, up to 120 miles. Another important clue was that in each railway colony the wage earners in most of the affected families belonged to such (lower) income groups as were entitled to obtain their supplies from railway grain shops located in the area or from the mobile shop trains which visited such areas. The mobile and the permanent grain shops drew their supplies from the Reserve Provision Store at one particular Divisional Headquarters of the railway.

Railway authorities were issuing the following rationed commodities from their grain shops to their employees up to a certain income level at concessional rates:

(*a*) Rice. (*b*) Wheat. (*c*) Atta or wheat flour. (*d*) Pulses or dal. (*e*) Spices. (*f*) Potatoes and onions. (*g*) Mustard oil. (*h*) Sugar. (*i*) Salt.

Attention was focussed on two of the above nine items: rice which might cause beriberi, and mustard oil which may cause epidemic dropsy. Clinically, the diseases resemble each other to a very great extent and it is not often possible to make a definite diagnosis without detailed clinical and laboratory methods.

INVESTIGATIONS

Soon after reaching the spot a schedule of enquiry was drawn up and the affected families were visited by us and the history of the outbreak was collected by personal investigations.

Out of the 139 families visited 25 were at D., 18 at M., 41 at J., 10 at N. and 45 at G. The total number of families investigated included 794 persons of whom the details are given in Table I. The local dispensary doctors were interviewed and the patients' registers were scrutinised to check the date on which the first case in each family sought medical advice. The patients were examined in the presence of their doctors.

TABLE I—LOCATION OF FAMILIES AND INCIDENCE OF DISEASE AT DIFFERENT PLACES

Names of Colony	*No. of families investigated*	*No. of individuals in the families*	*No. of persons per family*	*Affected cases*	
				Number	*Per cent*
1. D. ..	25	170	6·8	94	55·3
2. M. ..	18	92	5·1	49	53·3
3. J. ..	41	242	5·9	155	64·1
4. N. ..	10	67	6·7	30	44·8
5. G. ..	45	223	5·0	130	58·3
Total or average	139	794	5·7	458	57·7

The tabulation of the data to bring out the percentage incidence of illness in the different age and sex groups (see Table II) showed that the adults were more affected than the children.

TABLE II—PERCENTAGE INCIDENCE IN THE DIFFERENT AGE AND SEX GROUPS

Age and sex groups	No. of individuals	No. affected	Per cent affected
1. Adult males (over 14 years) ..	229	173	75·5
2. Adult females (over 14 years) ..	207	136	65·7
3. Children			
(*a*) 14 to 12 years ..	76	47	61·8
(*b*) 11 to 9 years ..	77	41	53·2
(*c*) 8 to 6 years ..	89	36	40·4
(*d*) 5 to 3 years ..	69	17	25·5
(*e*) 2 years and below ..	47	8	17·0

The lowest incidence (17 per cent) was found in children under the age of 2 years, and, within this group, none below the age of 8 months was affected. This positive correlation of percentage incidence with age suggested that the illness was probably associated with some foodstuff consumed in bigger quantities by the older groups. Children below the age of 8 months, who escaped, did not ordinarily take any solid food other than occasional meals of boiled rice or chapattis made from wheat and taken with a decoction of pulse and|or milk.

On examination of the information collected in the schedules from the 139 affected families facts were noticed:

(1) All the affected persons had consumed curries prepared in mustard oil purchased from the railway provision store.

(2) Some of the people affected had not consumed any rice supplied from the railway provision store.

(3) Three of the affected families were living outside the railway colony as none of their members were railway servants. But they had (evidently through questionable means) obtained their supply of mustard oil through their friends in railway employ. This information could be elicited and verified after assuring them that no action would be taken for their irregular dealings with some of the staff of the railway who sold them part of their rationed quota of mustard oil at rates less than the prevailing market prices. The price of a seer of mustard oil from the railway shop was -|8|- annas only because of a subsidy and the prevailing market rate was more than 3 times this price: Rs. 1|8|- to Rs. 1|12|- a seer.

(4) In one particular colony, J. out of 53 railway employees affected, 50 belonged to the Loco Branch and it was suggested to us (even mildly by one of the medical officers) that hard work on an engine precipitated the attack. A fair number of engine drivers in this particular colony, who belonged to the Anglo-Indian community, had escaped the disease. On enquiry it was found that Anglo-Indians used rice in their diet but rarely used mustard oil as it was not a popular cooking fat in their homes and also they were not ordinarily entitled to concessional rates owing to their higher scale of pay.

ILLUSTRATIVE CASES

The histories of the following patients definitely incriminate mustard oil as the causative agent.

(*a*) One K. son of a retired railway sweeper, but himself working as a dresser in a local hospital outside the railway premises, developed the disease along with other railway employees at M. On cross-examination and assurance that no steps would be taken in the matter, K. admitted having received frequent supplies of mustard oil from one of his relations who, being in railway employment, drew his ration from the railway grain shop at the subsidised rate and sold it to him at no profit. K. was obtaining his supply of rice from the bazar.

(*b*) Head train examiner (Indian Christian) at M. did not draw his rice ration from the railway grain shop but received his supply in bulk from his home in a neighbouring province. He had, however, drawn his usual ration of mustard oil from the railway shop and all the five members of his family contracted the disease.

(*c*) One Kh. a hotel keeper, lived close to the railway colony at M. Being an outsider he did not receive his supply of rice from the railway shop but he purchased oil from a grocer very close to the railway station. On further investigation his source of supply could be traced to the railway shop as some of the staff of the railway often sold oil, surplus to their requirements, to outsiders at some profit. All the three members of Kh.'s family contracted the disease about the same date as the affected railway employees at M. Kh. obtained his supply of rice from the bazaar.

(*d*) In the family of one B., a sweetmeat hawker in J. bazaar, three persons, his wife, son and daughter, contracted the disease. After a good deal of assurance B. admitted that he had recently purchased his supply of mustard oil from railway employees at the cheap rate. Being not in railway employment B. did not receive his supply of rice from the local railway grain shop.

(*e*) One S.M.R.K.S., clerk at the running shed at G., did not draw his ration of rice after the first week of September, which fact was verified from his ration card, but he received his supply of mustard oil from the railway grain shop in October. All the four members of his family including himself contracted the disease.

(*f*) One B., leading fireman at G. Loco Shed, had never drawn his rice but preferred a ration of wheat instead. He was not ordinarily a rice eater. He received his supply of mustard oil from the grain shop. Six members of his family out of eight suffered from the disease.

(*g*) One J., a shunter at G. yard, gave a history of not drawing his quota of rice ration since the first week of October as he often preferred wheat chapatti. The other members of his family were consuming rice as usual. He was drawing the ration of mustard oil from the railway shop. He had fallen ill but so far no other case had occurred among the rice eaters in his family.

(*h*) One M.H., another shunter in the G. yard, had not taken any ration of rice during the month of October. The last rice ration he drew from the grain shop was in the middle of September, but he drew his usual ration of mustard oil 10 days before he contracted the disease.

(*i*) M.E., a driver in G. Loco Shed, gave a previous history of epidemic dropsy in February 1945. Since then, on medical advice, he had not taken any rice from either the bazaar or the grain shop. The other members of his family all consumed rice. He drew his usual ration of mustard oil about a fortnight before he fell ill. Subsequently 5 members of his family contracted the disease.

Inspection of Rice and Mustard Oil

During visits to the affected houses the families were asked to produce, if possible, samples of rice and mustard oil consumed by them during the fortnight prior to the occurrence of the first case in the family. In the majority of houses they were unable to do so. In about 20 houses rice samples were available and mustard oil only in 9. Without exception it was found that the rice supplied was of a coarse variety and undermilled. It was difficult, if not impossible, to presume that such incompletely milled rice could cause beriberi because most of the grains were likely to retain their quota of thiamin or vitamin B_1.

All the nine samples of mustard oil recovered from patients' homes were tested with concentrated nitric acid as suggested by Lal *et al.* (1939) and in six of the samples a positive 'argemone oil' reaction occurred.

Description of Illness

The most common symptom complained of was a sudden onset of diarrhoea at times with tenesmus. This disorder of the bowel was accompanied by vague abdominal pain or discomfort and a gurgling caused by excessive flatulence. In generally three to five days the bowel trouble became less acute or stopped and swellings appeared in the extremities particularly in the legs and feet. The onset was so abrupt that the individual seemed to remember what he or she was doing at the time. In a few cases the intestinal disorders were seen to persist for as long as 12 days. A few of the patients did not complain of intestinal trouble.

In a small percentage of cases this sequence was reversed and the swelling of legs and feet preceded the intestinal disorder. Disinclination for food and persistence of flatulence seemed to be one of the commonest troubles. Most of these people said that they had not lost completely their appetite for food. They felt hungry before they sat down for their meals but after one or two mouthfuls a sense of satiety and of fullness in the stomach seemed to set in. There was no doubt about the fact that 80 per cent of the subjects examined looked ill and unusually malnourished. And it was no surprise when some of them complained of palpitation and breathlessness on exertion. Some of the people complained of ill defined tenderness and pain in the thighs. The medical officers of J., who had treated these cases in the early stages, stated that flushing of the face, neck and limbs were noticed in a fair proportion of the patients but we could see the flushing of neck and limbs in only 5 of the subjects. Vague pains in some of the joints were also complained of.

In the second colony that we visited, J., one young man volunteered the information that he had developed 'impotence' simultaneously with loss of appetite. After this disclosure about 30 male subjects between the ages of 20 and 40 admitted that they were very much worried by impotence. Oedema, loss of appetite, gurgling, fullness and a sense of discomfort in the abdomen and vague pains in the joints all confirmed the clinical findings of Lal and Roy (1937) on human volunteers suffering from induced epidemic dropsy after consumption of a poisonous sample of mustard oil. Nobody has so far reported the occurrence of impotence but in some of the cases produced by Lal and Roy, orchitis developed.

Bearing in mind that our enquiry was of the rapid survey type in five different areas with the object of finding out the food responsible for the outbreak and of suggesting preventive and relief measures, we could not devote the time we had wished to make a thorough clinical examination of each patient. Consequently we felt that a report on the percentage incidence of the signs and symptoms described above compiled from the completed schedules of enquiry would have indicated a degree of precision not justified by the facts. Only generalised indications of relative incidence have been made.

It was not found possible to elicit by enquiry the definite date or dates on which the particular sample of mustard oil was first used for cooking in each of the affected families. But, in most of the families, the oil was used within 48 hours of purchase. As the next available alternative an attempt was made to find out the average number of days that had elapsed from the time the ration of oil was drawn by checking the ration cards against the date on which the first illness in the families had occurred. This period varied in different colonies and was calculated as 9·3 days at D., 8·6 days at M., 10·5 days at J., 12·6 days at N., and 15·6 days at G., the average being 11·3 days.

Conclusion

All the signs and symptoms, taken with the epidemiological findings and the positive nitric acid test, led to the conclusion that the outbreak under investigation was one of epidemic dropsy caused by

the consumption of a certain consignment of mustard oil issued from the railway provision store.

Further investigations revealed the interesting fact that a few cases of epidemic dropsy had been reported about the same time in and around the town where the oil mill supplying this particular consignment of oil to the railways was located. And last, though not the least confirmatory evidence, the epidemic suddenly died down as soon as consumption of this mustard oil in the colonies affected was banned and its sale prohibited from the railway grain store.

Summary

An outbreak of epidemic dropsy among railway employees was investigated.

The cause was found to be one particular sample of mustard oil which gave a positive nitric acid test.

The outbreak was characterised by sudden onset with frequent loose stools, a sense of discomfort in the abdomen and persistent gurgling.

This was usually followed by œdema of the limbs, flushing of the skin, vague and ill-defined pains all over the body and sometimes in the neighbourhood of joints.

In some cases the œdema appeared first and the bowel trouble afterwards and in a few others no digestive disorder was noticed. There was marked loss of appetite with a sense of fullness after one or two mouthfuls of a meal.

One interesting feature was that a majority of patients between the ages of 20 and 40 years complained of impotence.

The investigations were made by house to house visits in 139 families.

About 75 per cent of male and 65 per cent of female adults were affected.

Amongst the children a positive correlation was noticed between age percentage incidence, which varied between 17 per cent in children under 2 years and 65 per cent in children between 12 and 14 years of age.

Acknowledgments

The authors are extremely obliged to the Railway Board, New Delhi, for giving them facilities to make the investigation and to Dr. L. N. Goel, the Divisional Medical Officer, for his assistance at every stage.

References

Lal, R. B. and Roy, S. C.—*Indian J. M. Research*, **25**:239, 1937.
Lal, R. B., Mukherjee, S. P. Roy, S. C. and Sarkar, G.—*Ibid.*, **27**:207, 1939.

For epidemiological study of Epidemic Dropsy the names of the colonies where this outbreak occurred should have been given in full. The reluctance of the authors in this respect is difficult to understand.—Editor, *J. Indian M. A.*

BLOOD GROUPS AND THEIR POTENTIALITIES*

ALI MOHAMMAD KHAN, M.B.B.S.,
Department of Pathology,
Glancy Medical College, Amritsar

This review of the physiology of blood groups is an effort to clear the confusion which has arisen due to the recent ceaseless efforts of various workers. Many informations are now available on this subject but they are not often clear. I shall try to put in this short survey, the essence of more or less all the work on blood groups which has taken 45 years to develop. In making this effort I may skip over certain points which, I take for granted, are known to all of us. We all know the fact that probably the greatest achievement and the most important single discovery in the history of blood transfusion was the demonstration by Landsteiner (1900) of the isoagglutinating and isoagglutinable substances in human blood. Karl Landsteiner in 1901, while working in Vienna, published his discovery of three blood groups, naming them A, B and C with regard to their agglutinating reactions and indicated their practical significance. Von decastello (1902) and Sturli, the latter, a pupil of Landsteiner, added the fourth group. Hektoen further emphasized the significance of blood groups in the performance of blood transfusion and Ottenburgh and his associates first applied the procedure in actual transfusions. Jan Jansky (1907) worked out the reciprocal agglutinating reactions of the four groups and classified them accordingly. Unfortunately due to the relative inaccessibility of Jansky's publication which was in the Bohemian language and published in an obscure Czech Journal, it remained unrecognised until after Moss published his studies. W. L. Moss of John Hopkins Hospital Baltimore, (1910) unaware of the work of Jansky, transposed group 1 and 4 of Jansky's classification. Although Moss's classification received wide adoption, considerable confusion resulted. In 1921, the committee of the A. M. Association reviewed the question and recommended that in view of priority of three years, preference be given to Jansky's grouping. The decision of this Committee in view of the large advertisement of Moss's classification was not a wise one and hence in order to obtain uniformity of nomenclature the matter was discussed before the Public Health Committee of the League of Nations by the Commission for Standardisation of Sera. It was decided to name the antigen, i.e., agglutinogens by lettering because this is the dominant hereditary factor. It is really interesting that so late as 1929 in New York at the Central Offices of the Transfusion Bureau it was noticed that the telephone operators' first question on receiving a call for a donor was "Moss or Jansky". About 80 per cent of the hospitals in U. S. A. were using the Moss Plan till then. The international nomenclature is adopted here and should be generally adopted, as, because from a scientific point of view it is more rational, from a clinical it is safer and from a terminological aspect it is simpler.

* Paper read at a meeting of the Amritsar Branch of the I.M.A.

By now Landsteiner had postulated the theory that the two antigens in the cells and two antibodies in the serum were enough to solve the problem. This fact he proved by absorption experiments which showed that the active principles were true agglutinins and that they were truly specific to the corresponding agglutinogens and that apparently agglutinins and agglutinogens of the same type could not occur in the same blood. Later workers, perhaps better mathematicians, calculated that the combination of these four factors by no means is limited to the formation of four groups. Sixteen mathematical possibilities are in fact possible and after subtracting biological impossibilities, *viz.*, the coexistence of homologous agglutinins and agglutinogens in the same blood—there remains nine possible combinations. Of these four Landsteiner Groups are most commonly met with, the remaining possibilities are very occasionally found. They are usually present as defective blood-groups, that is either the agglutinogens factor is missing or the agglutinins are not present. Thus an individual may possess A Cells but no agglutinins in the serum-AO or O cells and only one agglutinin in serum O(b) (W & B:1937).

I will take up the antigens in the red blood cells as they have the upper hand in blood transfusions. Along with the work on the human erythrocytes experiments were carried out on bovine cells as well. A paper was published on the 17th of October, 1942 by Ferguson and his coworkers, of the Department of Genetics—University of Winconsin. They have demonstrated thirty different hereditary isoagglutinogens in the erythrocytes of cattle. If these cellular antigens represent the number of hereditary specificities present in bovine red blood cells the calculated number of different individual combinations would be slightly over one thousand million (1,000,000,000). According to Ferguson the addition of only a few more independently occurring antigens, to the thirty now recognised, would bring the calculated number of possible combinations to a staggering total, not even approachable by the national debt. Antibodies against as many as twelve of these unit components (A, B, C, G, J, S, V, W, Y, Z, E′, G′) have been identified in a single immune bovine serum.

Now let us change over to the human erythrocytes. We know that erythrocytes contain A and B isoagglutinogens which are the bases of group-formation. Dungern and Hirschfeld (1910) have found that most A cells have two agglutinable bodies, but a minority have only one. This divides A cells into two types. The majority A, agglutinated by α factor and α_1 factors, the minority A cells agglutinated by α factor only. It will be seen that this subdivision of the groups A and AB into A_1, A_1B, A_2 and A_2B is based on the agglutinogen factor in the cells and that no mention is made of the development of corresponding agglutinins. It may be wondered as to what is the significance of the sub-groups in the practice of blood grouping and how is it that incompatibilities are possible between individuals of the same group between whom the only apparent difference is a qualitative one affecting the agglutinogens factor only? If for instance sub-group A_1 contained an agglutinin which was antagonistic to the agglutinogen present in sub-group A_2 cells then the incompatibility could be explained. Landsteiner and Levine (1929) have shown that such atypical agglutinins are in fact present in approximately 3 per cent of individuals.

Landsteiner and Levine (1927) revealed the presence of agglutinable factors unrelated to the agglutinogens known beforehand, A & B in the human red blood cells. These factors were named M & N, and one or the other was found always present in the cells of any given sample of blood. The M & N factors are distributed irrespective of groups or subgroups and since their corresponding anti-M and Anti-N isoagglutinins are not present in the serum, these factors do not play any role in the selection of donor for transfusion or the preparation of sera for stock-typing purposes. I shall presently refer to the anti-M factor in this description. These factors have their importance in medico-legal work; in repeated transfusions and in experimental work to find out the life of red cells after transfusions.

Levine and Stetson (1939) suggested the presence of a new antigen present in the human R.B.C. to be responsible for intra group transfusion accidents. Landsteiner and Weiner (1940) demonstrated this new antigen and designated it as Rhesus factor or Rh-factor, as it was found by experimenting on the cells of rhesus monkey and human erythrocytes. Its practical importance was first shown by Weiner and Peters (1940) in blood transfusions. The former worker took up the question of the heredity of this antigen and suggested that two allelomorphic genes—Rh & rh were concerned. Rh being dominant when the husbands phenotype is Rh+and that of the wife Rh—, the phenotype of the baby will depend upon whether the husbands genotype is Rh Rh or Rh rh. If the former, the infant phenotype will always be Rh-rh, hence Rh+, if the latter 50 per cent of the siblings will be Rh+. This antigen is presumed to be not possessing any antibody to start with but is capable of exciting the formation of antibody in an Rh-individual when transfused repeatedly with such antigen. It is believed that an Rh+ infant may be responsible for the production of an Rh antibody in an Rh negative mother though the mother has received no transfusion with such antigens. Various workers in America, England, Calcutta and so many other places have investigated the presence of this antigen in the populations of those places and all of them have obtained practically the same figures, 85 per cent being positive and 15 per cent negative. Race and Raylor as lately as September, 1943 stated that perhaps the Rh antigen has as well the same Sub' properties as A antigen in red cells *i.e.*, it is of two types inducing the formation of two types of antibody, to which I shall presently make a reference. Still recent work (1945) shows that this antigen is somewhat more complex than what was originally said about it; about six sub-types are known. This antigen has more or less brought to light the etiology and pathogenesis of erythroblastosis. A dozen of workers during the last year working on this clinical reality has proved it to be the factor responsible in this group of diseases.

Now taking up the human plasma Landsteiner described only two antigens α & β while making up his theory of isoagglutinins. American workers are of the opinion that plasma contains group specific agglutinins, as well. A and B agglutinogens contained in the cells are now designated as A and B substances by these workers. Contrary to Landsteiner, Witebsky and his co-workers think that it is not only these isoagglutinogens which are present in the cells but their isoagglutinins are present in the plasma as well. The concentrations of the isoagglutinins are not capable of effecting an agglutination under normal circumstances. Milton, Levine and Davidstate also think the same. These substances are separated from the group specific plasma in purified form. Ginde of Bombay while discussing the subject states that plasma too, being of four types corresponding to the four blood groups only group AB plasma containing no agglutinins is ideal for transfusion purposes and can be given in any quantities with impunity. The plasma of the other groups containing one or both the agglutinins should not for obvious reasons, *viz.*, of causing agglutination of patient's cells, be given in quantities exceeding a pint at a time, and should whenever used be given preferably diluted with saline, and at a very slow rate about half the usual drip rate *i.e.* about 20 drops a minute. If this statement is correct then it means that plasma should not be administered without being cross-agglutinated against the patients blood before transfusion. Until now it was thought that 500 c.c. (pint) of plasma can safely be administered without agglutination test. I feel that agglutination should be carried out as I know of two cases from the wards of the Mayo Hospital Lahore, where the patients developed typical hæmolytic shocks after the infusion of 30 c.c. of plasma in the first case and a small quantity in the second. The first case stood the reaction while the other is said to have succumbed to it. Hence it is possible that these factors may be present in a certain defectively pooled plasma in quantities enough to cause, intravascular agglutination, leading to fatal results. Nothing can be said about the serum as yet whether it contains these A, B factors as well or not. Late Col. Hayes' experience with the serum is quite different. He believed that as large as 1000 to 2000 c.c. of transfusions are quite safe. Personally I have not come across any such instance after having observed about 46 large transfusions. May be that we were all dealing with the transfusion of the patient where the sera pooled were safe for transfusion purposes.

Paterson, Race and Taylor (July, 1942) discovered an antibody—apparently anti-M. It was in the case of a woman 28 years of age and pregnant for the fourth time who might have needed a transfusion during parturition. Her blood group was O and she was Rh positive. Serum obtained from her, four months after her confinement was tested against the erythrocytes of 20 persons belonging to group O. Undoubted and clear-cut agglutination was found in fourteen of the mixtures; all contained the agglutinogen M. The six mixtures with no agglutination belonged to group ON and so lacked the antigen M. Although such occurrence may be exceedingly rare, the case reported shows that its presence may interfere with the selection of a suitable blood for a person in whose serum this antibody appears. Kilduffee and Debackey have also reported a case with anti-M agglutinin.

Now I shall take up the Rh antibody. As discussed above the Rh, antigen is capable of producing an antibody. This antibody was supposed to be more active at low temperature 5°C but now it is believed to be at its best at body temperature 37°C. This gives a particular type of agglutination—making special type of patterns of the agglutinate when the test is carried out properly. This antibody is said to be responsible for the pathology of erythroblastosis fœtalis. As most of the work on this antibody is carried out on the sera of erythroblastatic families, Levine, Janert and Katzin (1941) have suggested the presence of another antibody anti PH. According to Weiner (1942) this irregular agglutinin acts on Rh cells and certain Rh negative cells which he designates Rh_2 on the analogy of the sub division of the group A. Race and Taylor (1943) have come across such antibody in their investigations, and such cases as well, have been recorded by Javert (1942a, 1942b). Davidson and Tharskey (1942) think that the subdivision of Rh, factor is much more complex than this. Now six types are known Rh_1 to Rh_6.

Now before a transfusion is carried out the transfusionist must know as to which of the antigens (A1, A2, B; O, M; N; Rh_1-Rh_6 and which antibodies α, α_1, β, anti-M, anti-Rh_1 to anti-Rh_6) do the cells and plasma of the donors or recepients possess.

Lastly I may state that a particular serum may start changing its behaviour under certain circumstances *e.g.* a particular serum may agglutinate any cells at very low temperatures, say O°C or lower-cold-agglutinins. It may start agglutinating cells in high titer as occur in certain diseases *e.g.* pregnancy, menstruation, sepsis and other acute and chronic infections. A serum after having been exposed to certain bacteria, namely J and M bacilli, may lead to the production of an enzyme which when it acts upon the red cells transform a latent agglutinogen into an active receptor leading to agglutination of cells irrespective of its group. Most important of all a cold agglutinin may change its character under certain pathological conditions namely haemolytic icterus; Raynaud's disease, paroxysmal hæmoglobinuria, syphilis, trypanosomiasis, severe anæmia, malaria and other diseases and may start agglutinating its own cells (autoagglutination) and other cells at room temperature. These changes in the property of sera apparently are of very great importance in the correct preparation of group typing sera and typing of various blood groups by blood bank worker.

In the end I must add that the work on blood groups and various antigens and antibodies is in no way complete and very experienced transfusionists still think that there are still many latent activities in the blood which need exploration.

References

Boorman, K. E., Dodd, B. E. and Mollison, P. L.—*Brit. M. J.*, **12**:434, 1942.
Davidson, I. and Tharskey, B.—*Am. J. Clinical Path.*,

DECASTELLO, A. VON AND STURLI, A.—*Munchen med. Wchrschr.*, **49**:109, 1919.
DUGERN, E. VON, AND HIRSCHFELD, L. Z.—*Ztochr. f. Immunitatsforsch*, **6**:284, 1910, quoted by Riddle, V. H.—Blood Transfusion by Victor Horsley Riddle, Oxford University Press, 1939.
GINDE, R. G.—*Indian Physician*, **1**:321, 1942.
HEKTOEN, L.—*J.A.M.A.*, **48**:1739, 1907.
JANSKY, J.—Quoted by Kiduffe, R. A. and DeBackey, M.—The Blood Bank and the Technique and Therapeutics of Transfusions p. 37, 1942.
JAVERT, C. T.—*Surg. Gynec. & Obstet.*, **74**:1, 1942a.
Idem—Am. J. Obstet. & Gynec., **43**:921, 1942b.
LANDSTEINER, K. AND LEVIN. P.—*J. Immunol.*, **17**:1, 1929.
Idem—Pros Soc. Exp. Biol. Med., **24**:941, 1927.
LEVINE, P.—On Year Book of Pathology and Immunology., Chicago., p. 509, 1941.
LEVINE, P. AND STETSON—Quoted by Boorman and others—*Brit. M. J.*, **2**:535, 1942.
LEVINE, P. AND OTHERS—*Am. J. Obstet. & Gynec.*, **42**:925, 1941.
MOSS, W.—*Bull. Johns Hopkins Hosp.*, **65**:74,
TAYLOR, J. L.—*Proc. Roy. Soc. Med.*, **36**:225, 1943.
WEINER, A. G.—*Am. J. Clins. Path.*, **12**:302, 1942.

CHRONIC PULMONARY TUBERCULOSIS

N. P. KUNDU, M.B., CAPT., I.M.S., (LATE)
Pabna

The incidence and mortality of pulmonary tuberculosis are rising higher and higher in our country and this painful fact has prompted me to attempt to write this brief note on the etiology, prophylaxis, early diagnosis, prognosis and treatment of chronic pulmonary tuberculosis.

Regarding etiology the famous soil and seed analogy of Sir William Osler elucidates everything about it nicely. The necropsy findings of Opie, Adami and Naegeli show that tubercle bacillus infections are virtually universal, but only approximately less than 3 per cent of the people develop clinical tuberculosis. So, we clearly see how nature is manufacturing immune bodies in the human system incessantly. Under no circumstances we can escape tuberculous infection in our present hard struggle for existence, but we can certainly help nature in her daily work of immunisation by avoiding intemperance of every kind, by intake of food of sufficient nutritive value and by living in dry, well-lighted and well-ventilated houses. In the present hard struggle for existence the last two, *e.g.*, food of sufficient nutritive value and suitable houses fall to the lot of very few and so the incidence and mortality of chronic pulmonary tuberculosis are rising higher and higher. In this connection I am tempted to quote Prof. Sigerist and say—It is well known that health conditions are determined not only by the status of medicine but also by the general standard of living which in India is extremely low. When people have not enough to eat, constantly suffer from malnutrition and live in a poor sanitary environment they are always threatened by disease and have little resistance to offer.

Regarding prophylaxis a clear grasp of etiological factors is essential for carrying out efficient prophylaxis, which has to some extent been dealt with under etiology. Besides, prophylaxis has got an individual and social aspect. The individual aspect comprises the following:—(*i*) Avoiding intemperance of every kind. (*ii*) Intake of food of sufficient nutritive value. (*iii*) Living in dry, well-lighted and well-ventilated houses. (*iv*) Avoiding as far as possible tea stalls, restaurants, hotels and the like. (*v*) Avoiding contact with the tuberculous individual and the articles he uses. The social aspect comprises co-operation of the administrative authorities, the public and the medical men of a country in the following matters:

(*i*) Raising the economic status of the country by industrial and agricultural development so that the general standard of living may be raised at the optimum level. (*ii*) Establishing sufficient number of chest clinics in the country. (*iii*) Compulsory free primary education which should include teaching of prophylactic methods against the preventable diseases, symptoms of the early stage of chronic pulmonary tuberculosis and the importance of attending the chest clinics on the appearance of any of those symptoms. (*iv*) Establishing sufficient number of segregation hospitals all over the country for segregation and treatment of pulmonary tuberculosis cases. (*v*) Encouragement of research work on the comparative results of prophylactic mass inoculation with T.B.E., Prof. Shiga's T.B. serovaccine, Dr. Nathan Rao's attenuated tubercle vaccine and Prof. Dreyer's 'defatted' tubercle antigen.

Regarding early diagnosis it is important not only for the recovery of the patient but it is much more important for the welfare of the society. It is the duty of the medical man to segregate the patient before he turns out to be an 'open' case. In the early stage the ordinary physical means of diagnosis cannot detect anything in the lung in the vast majority of cases. In the early stage subjective symptoms are more important than physical signs. The various modes of onset described by Sir William Osler should be carefully remembered especially in our poor country where most of the people cannot afford radiological examination. It should also be remembered that approximately 61 per cent of early cases do not show any tubercle bacilli in the sputum and also that an otherwise unexplained temperature should be strongly suspected as tubercular in origin. At the present time physicians and radiologists are agreed that radiography is the best means of detecting early cases. Screening and photography of antero-posterior, postero-anterior, and two lateral views should be done instead of antero-posterior view only which is often inadequate. None of the following can be neglected if an early diagnosis is to be made:—(*i*) Family and personal history. (*ii*) The appearance of the chest and shoulders. (*iii*) X-ray screen and photograph. (*iv*) Ordinary means of physical diagnosis. And lastly, febrile mitral disease with passive congestion of the lungs with or without hæmoptysis, pulmonary amœbiasis, bronchomycosis, bronchospirochætosis and pulmo-eosinophilæmia should be eliminated carefully.

Regarding prognosis it depends on the following factors:

(*i*) A positive family history influence the prognosis favourably. (*ii*) Personal history—life of intemperance influences the prognosis unfavourably. (*iii*) The age of the patient—in general the older the

patient the greater is the chance of survival for a fairly long time and also of recovery. (*iv*) Appetite of the patient—a good appetite is a good prognostic sign. (*v*) Response to treatment—patients who become afebrile within a month with perfect rest, suitable diet and simple drugs like codliver oil preparations, calcium preparations with vitamin D and creosote very often recover. (*vi*) Stage of the disease—the earlier the disease is detected and treatment begun the greater is the chance of recovery. (*vii*) Presence of complications and associated disease—anorexia, nausea, vomiting and diarrhoea are the worst complications. If these cannot be combatted the patient rapidly goes down hill. Similarly, some other associated disease especially dyspepsia, gallbladder disease or liver trouble if present materially lessens the chances of recovery. (*viii*) Sedimentation rate of R.B.C.—in active cases the S.R. is high. If the S.R. becomes normal or nearly normal within two months from the beginning of the treatment the prognosis is good. (*ix*) Blood lipase content—patients with low blood lipase content present but poor chances of recovery. (*x*) Last though not least is the financial condition of the patient enabling him to undergo treatment under a specialist in a sanatorium.

Regarding treatment the efforts of research workers in the discovery of a true specific is still being baffled. Codliver oil preparations, malt, malted codliver oil, calcium hypophosphite, calcium gluconate, calcium gluconate with choline hydrochlor, gold preparations, combined calcium and gold preparations, creosote, guaiacol, T.B.E. and other tuberculins, liver extract and vitamins A, B, C, D, all have their place but none can be regarded as a specific. 'Diasone' has been highly spoken of in the editorial of *Calcutta Medical Review* (May, 1945) but being unavailable in the market it has not been tried here. This tempts one to suggest on the strength of the observation that the tubercle bacillus has got a strongly protective lipoid sheath and also on the strength of the observations of Sir Leonard Rogers in England and others in America that tuberculous patients with low blood lipase content present but poor chances of recovery. This new suggestion is given also on the strength of the experimental observation of Dublet on guineapigs and on the strength of the therapeutic observation of Kotta on two hundred (200) human cases of chronic pulmonary tuberculosis. The new suggestion is lipolytic enzyme prepared from the blood plasma or liver of animals. Insulin effects lipolysis in an indirect way and so long as injectable lipase is not available in the market, we can use protamine Prot zinc insulin. I request my colleagues to have their injectable lipase prepared from a reliable bio-chemistry laboratory and compare the results of lipase treatment with those of any other treatment. The dose for adults is 5 c.c. to begin with and ends with 8 or 10 c.c. with gradual increase according to the nature of the case. It is given intramuscularly at intervals of five days. Exudative types are not suitable cases for treatment by this method. They should first of all be controlled by calcium-ostelin injections and then treated by this method. In children the preparation is given by mouth. It should be remembered that enzymes are likely to lose their efficacy within a short time and so must be freshly prepared. Along with drug treatment, A.P., phrenicectomy, combined A.P. and phrenicectomy, thoracoplasty and Jacobaeus's operation should be done in suitable cases which do not improve with drug treatment alone. But in a poor country like ours very few patients can afford to undergo any of the said operations by trained experts. I have dealt with the medical and surgical aspects of treatment and last of all are to be mentioned the effects of perfect rest, graduated exercise, a suitable diet and a suitable climate. Perfect rest is as essential in febrile cases as graduated exercise in afebrile cases. Patient's appetite is the best guide for the selection of a suitable diet, and no pains should be spared to increase the patient's appetite. Protamine zinc insulin may be injected to increase the appetite. Insulin by helping lipolysis is likely to have some beneficial action on the inmunising process also. A well balanced diet containing sufficient carbohydrate, animal protein, animal fat, vitamin especially A, B, C, D and mineral salts especially calcium are essential.

Regarding climatic treatment the increased metabolism at high altitudes must tend to heighten the power of resistance and this therapeutic agent offers a valuable means for the treatment of this fell disease in properly selected cases. The patients who should never be sent are those in the advanced third stage of the disease, emaciated by toxæmia and fever, and enfeebled by the strain of prolonged and active disease. Patients with a tendency to big hæmorrhages, especially where the blood pressure is raised, should not be sent to high altitudes. Patients with acute inflammatory conditions, severe secondary infections or those with large septic cavities do not, as a rule, do well in the mountains.

FRACTURE OF THE NECK OF THE FEMUR

D. COMAR, B.SC., M.B.B.S.,
Delhi

Fracture of the neck of the femur usually occurs in elderly patients over the age of fifty although it is not unknown at earlier ages. In old people trivial strain such as tripping over or stumbling on a stair commonly results in this injury while a much stronger direct force causes this fracture in young people. It is often possible for the patient to move the hip and even to walk inspite of the fracture and shortening may not develop for days and the only clinical sign that would suggest the injury is the external rotation of the limb.

Fracture of the neck of the femur can be divided into two main types: (*i*) fracture through the narrow part of the neck: the joint capsule remains attached to the distal fragment and the tendency to external rotation is limited by capsular resistance and does not amount to more than about 45°; (*ii*) fracture through the broad part of the neck or tro-

chanters. When the fracture is at the base of the neck distal to capsular attachment—the external rotation is marked and the foot lies flat on the bed.

Another subdivision of fractures of the neck of the femur is of great importance in treatment.

(1) Abduction fracture when the shaft and neck of the femur are abducted on the head.

(2) Adduction fracture when the shaft and the neck are adducted on the head of the femur.

The abduction fracture is less common and always occurs at the subcapital level and the fragments are impacted on the outer side. Muscle retraction and weight bearing impacts the fragments still more closely because the axis of the movement runs through the fracture. These fractures always unite even without treatment. The patient may be completely ignorant of the fracture and move about with a limp. The line of fracture is almost horizontal and therefore free of shearing strain.

The adduction fracture may occur at any level of the neck, subcapital, transcervical, inter-trochanter or per trochanter. Whether or not the fragments appear to be impacted, the muscle retraction and the weight bearing shears the fragments on each other because the line of movement of the fragments is across the fractured surface and not through it as the fractured line lies in a relatively vertical plane. Even if there is no weight bearing and the patient lies in the bed the fragments rub on each other because of the contraction of the hip muscles. There is hyperaemic decalcification and the bone is absorbed. The whole femoral neck may disappear. These fractures unite only if they are carefully and completely immobilised.

The fracture through the broader part of the neck or the basal fractures occur quite frequently in old people and they almost always unite no matter what the position is; mainly because of a free blood supply to both sides of fracture due to the anastomosis round about the greater trochanter and also to some extent because of a wider area for union is available. This is supplemented by impaction of the fragments so that rotation and the shearing stress are reduced. A firm bony union occurs if the limb is adequately immobilised by a plaster spica. A complete immobilisation is necessary because although the tendency towards union is considerably stronger than in intracapsular fractures, inadequate immobilisation may be followed by the usual penalty of non-union; moreover if the limb is not immobilised in abduction for 3-6 months the soft callus bends and coxa vara develops with shortening of the limb.

Various methods of immobilisation are known.

Whitman succeeded in reducing the fracture by abduction, internal rotation and extension of the limbs and putting the limb in plaster spica. The immobilisation in this way does reduce the tendency to bone absorption and allow many fractures to unite. Subcapital fractures are easily reduced by this simple manœuvre of abduction and internal rotation and heavy traction is unnecessary. In transcervical fractures however, reduction is sometimes more difficult, especially when there is a projecting spike from the head which lies behind the externally rotated neck and prevents it from sliding back into position. This method of simple manipulative reduction and plaster immobilisation is associated with three serious disadvantages.

(1) The knee joint is immobilised for many months and since the patient is usually elderly and subject to arthritic changes intractable stiffness of the knee often develops.

(2) The blood supply of the femoral head may be impaired by the fracture so that union is not complete within the usual period of 3-4 months and immobilisation may be necessary for 12 months or even longer which is advisable in elderly patients.

(3) It is difficult, especially in obese subjects, to mould a plaster spica so closely that rotation movements of the pelvis and therefore of the head of the femur is controlled while the muscle retractions continue shearing movements. Rotation and shearing strains give rise to bone decalcification and if the fracture unites at all it is at the cost of shortening of the neck of the femur and limitation of hip movements. In many cases the union is not achieved.

These failures encouraged the internal fixation by pinning the two fractured ends. This not only gives a complete immobilisation but also leaves the knee joint for free movement and saves the patient from a heavy cast and the complications associated with it. This technique has improved the results to a marked extent. In the trochanteric fractures some difficulties arise in the pin immobilisation for the fracture lies so close to the cortex of the other surface of the femur that the distal fragment is too thin for successful nailing. Moreover the shaft of the femur is more prone to splitting. Therefore in basal fractures especially when comminuted and unsuitable for pinning or if nailing has failed owing to splitting of bone and patient is too old for treatment in plaster Well-leg traction is considered the best.

During the year 1945-46 about 50 cases of fracture neck femur were admitted in the Irwin Hospital, Delhi with an average age incidence between 50-90, although some cases occurred under 40 years of age. Out of these 20 cases were through the broad part of the neck and the rest of the narrow part of the neck.

Trochanteric	20	(40 per cent)
Cervical: Abduction fracture	5 ..	(10 per cent)
Abduction fracture	25 ..	(50 per cent)

Amongst these 50 cases 70 per cent cases fell between 50-90 years of age the maximum percentage being between 60-70 *i.e.*, 38 per cent. The table gives the complete age incidence, the youngest case being 10 years old and the oldest 90 years.

Age	*No. of cases*	*Percentage*
10—20 yrs.	3	6
20—30 „	3	6
30—40 „	2	4
40—50 „	7	14
50—60 „	9	18
60—70 „	19	38
70—80 „	3	6
10—50 „	15	30
50—90 „	35	70

Out of the 20 fractures through the broad part the minimum age was 16 years and the maximum 85 years, the average common age was 60-70. The attached table gives the complete list:

Age	*No. of cases*	*Percentage*
16 yrs.	1	5
20—30 „	3	15
30—40 „	2	10
50—60 „	2	10
60—70 „	9	45
70—80 „	2	10
85 „	1	5

The fracture was more common in male being 60 per cent. as they lead an outdoor life and are more liable to falls.

In elderly people the common cause of the fracture was slight injury as a result of tripping and falling on the injured limb. The young cases almost always resulted as a result of accidental fall from a height.

We have three surgical units in the hospital and each surgeon handled some cases differently which gave a good chance to compare the results.

All agree to plaster immobilisation for the treatment of the fracture of the broader part of the neck and the abduction fractures as we know that these fractures do unite without much ado, it is only the adduction fracture of the narrow part of the neck that offers some difference of opinion.

In one unit Dr. S. K. Sen, F.R.C.S.(E), on bases of his experience of non-union of such fractures advised the patient McMurray's osteotomy as early as 7 days after the fracture. If, however, the patient refused bifurcation operation he was put in a plaster spica after reduction under general anaesthesia. The reduction was effected by full abduction and full internal rotation. The plaster was changed at three monthly intervals and position reviewed by skiagrams. The percentage of non-union in such cases was high upto 62 per cent and the absorption of the neck resulted. If the union did not occur after 3-6 months the subtrochanteric osteotomy was again advised and performed. Now the type of bifurcation was decided by the amount of absorption. If it was realised that the head of the femur had undergone necrosis the Lorenz's type of bifurcation was done and if the head was still present MacMurray's type was performed. It was seen that after the bifurcation operation a bony block did take place between the bony ends in 3-6 months in cases when the head did not undergo avascular necrosis.

In the other unit Dr. Hakim Din, F.R.C.S., decided his treatment on the age of the patient. In young people and adults the limb was put in skeletal extension till both the limbs were equal in length. This took about 3-4 weeks. Then the fractured limb was put in Whitman's plaster for 3 months. The plaster was repeated, if necessary, for another three months. In old people the fracture was reduced on orthopoedic table under general anaesthesia and the limb put in plaster spica. The results have been satisfactory particularly in young people with practically no failure. The percentage of failure was about 10 and osteotomy was advised to such patients.

In the third unit Lt. Col. B. S. Nat, F.R.C.S., I.M.S., did Smith Peterson's pinning in all fractures of the neck of the femur. The resultant immobilisation was very satisfactory and union was the result. The other cases of fracture through the broader part of the neck were treated with plaster spica and the union effected in 3-6 months.

On the whole the treatment of fracture neck in the older people is comparatively unsatisfactory especially in the adduction type of the fractures. My observation on a very short series of cases lead me to believe that probably the treatment of choice is the pinning after very acute reduction in the adduction type of fractures. In the abduction type if the fracture is left alone and no treatment instituted except general nursing, the results are uniformly satisfactory. In the late cases however when the neck is absorbed or the head is necrosed the treatment of choice in both the cases is MacMurray's operation or Lorenz's osteotomy.

The view held by Dr. S. K. Sen, F.R.C.S.E., that all adduction type of fracture should be advised to have early osteotomy is a debatable question and the data available from Dr. S. K. Sen's clinic is not yet sufficient to justify this conclusion.

SPECIAL ARTICLE

A SCHEME FOR RE-ORIENTATION OF AYURVEDA

D. N. BANERJEE, M.B. (CAL.), M.D. (BERLIN), AYURVEDABHUSAN.

Professor of Pathology, Carmichael Medical College, Calcutta

INTRODUCTION

All eyes are now directed to the advancement of the ayurvedic system of medicine. This is due to the Central Government having now "appointed the Committee on indigenous systems of medicine to consider and recommend the steps that should be taken to improve the facilities for research and training in indigenous systems of medicine and generally to increase their usefulness to the public." Not only the Central Government, but also the provincial ones, *viz.*, Bombay, U.P., C.P., Madras etc., have appointed similar inquiry committees. The Working Committee of the Indian Medical Association has also taken the very right step on this matter and "recommends that the indigenous systems of medicine, like any other system of science, should be thoroughly examined and investigated with a view to ascertain their merits and utility in the field of preventive and curative medicine, in the cause of the public health and welfare of this country, in the light of the latest available knowledge and information of medical and allied sciences". Under these circumstances I propose to submit herewith a definite scheme for the improvement of Ayurveda with a view to increase the usefulness of this system.

Before proposing the scheme I desire to draw the attention of the Working Committee of the Indian Medical Association as regards the great task it is proposing to shoulder.

It is a known fact that Ayurveda has passed through serious phases of degeneration and tribulation during the last 4000 years or more. We must not take that into our account in our present task as it is the inherent business of the eternity of time to cause change and that not only with a particular science but in all phases of creation as well as of nations, empires etc. We must also not be carried by any sentiment as regards the past glory of Ayurveda, although every Indian should rightly feel proud of that. We must restrict our study to the ayurvedic literature as extant today and not what she had at the time of her glory.

It is my firm conviction, from what little I had been able to study Ayurveda, that the present day available literature is still very rich and the basic medical sciences *viz.*, chemistry, physics, biology, anatomy, physiology, pharmacology and pathology, on which we are particularly concerned at the present moment can undoubtedly stand the scrutiny of modern sciences.

I draw the particular attention of the Working Committee of the Indian Medical Association to this as I feel that this is the proper authority to undertake this task. The teachers of modern medicine, if they study Ayurveda with a critical eye, are the proper persons to deliver the goods in the re-orientation of ayurvedic doctrine, particularly in anatomy, physiology, pharmacology and pathology, than the best trained orthodox ayurvedist. I give the following reason to elucidate this point.

For more than quarter of a century ayurvedic colleges have been established in different provinces. We have the opportunities to observe the methods of teaching in these institutions. The teaching is absolutely unsatisfactory. A doctor teaches modern anatomy, another modern physiology, while the third modern pathology. One ayurvedist teaches ayurvedic *sharir* which consists in explanation of certain passages from the text only, the teacher being absolutely innocent about the actual realities of the subject. A doctor is in charge of the surgical department and the names of the diseases diagnosed are those of modern medicine, e.g., conjunctivitis, ophthalmia etc. and the treatment is also done with modern methods. Such is the training, in which the student is taught more of modern medicine than Ayurveda. The teaching of modern medicine, again, is hopelessly below the normal standard. The result is that as the student is not equipped with the basic sciences, *e.g.*, chemistry, physics, and biology they find themselves incompetent to follow modern medicine and they cannot compromise their ayurvedic teaching, *viz.*, how 24 (or 200) *dhamanies* originate from the *navi*, how the 700 *shiras* originating from the *navi* are distributed, why no description of brain, the most important organ, is mentioned anywhere, and similar simple and fundamental queries which crop up in his mind. He has thus no faith in Ayurveda and it is not uncommon to find alumni of those institutions in their practice advise emetine when they are called in to treat a case of dysentery. One feels that the present system of education is somewhat hybrid.

The difficulty of the teachers is no less. They have got to face queries from the students about the interpretation of ayurvedic teachings with those of modern science and as majority of the teachers have no training on modern science, they cannot correlate the findings. The same with the teachers of the modern sciences as they are innocent of the ayurvedic knowledge.

The deleterious result of this state of affairs has been two-fold—(*i*) The students gradually lose faith in their ayurvedic teaching and (*ii*) the teachers, during the last quarter of a century or more, have not been able to set out adequate text books which will guide themselves as well as the students nor they have succeeded even in formulating a plan how this can be achieved. This naturally gives an impression to all that ayurvedic science is inadequate for the purposes of training the students.

What is the cause of this failure in resuscitating the teaching of Ayurveda under the able hands of the teachers all over India? The only reason is that no adequate research (search, I should say,) has been made in the basic sciences of Ayurveda, *viz.*, anatomy, physiology, pathology and clinical medicine, although, on scrutiny, it is found that these sciences in Ayurveda, as extant today, can go hand in hand with the modern science.

It appears to me that unless researches (rather searches) are done on these subjects, no useful purpose will be served by establishing colleges only, where teaching will be imparted on the stereotyped lines as in vogue at present with the numerous institutions existing all over India including those of the All-India Ayurveda Vidyapith.

For this reason, I believe that the teachers of modern medical sciences and as a matter of that the Working Committee of the Indian Medical Association, if they study Ayurveda, are the proper authorities to deliver the goods.

The Scheme

While presiding over the Mohakosal (Berar) Provincial Ayurvedic Conference held at Darwa during October 1944, had the opportunity to give a four-fold programme for the resusciation of Ayurveda in my Presidential Address, an abstract of which has been published in the Ayurveda Mahasanmilan Patrika, Dec. 1944, (*Caturanga Yojana*). I take this opportunity in expressing my best thanks to Kj. M. K. Mukherjee, the then President of All-India Ayurveda Conference for his suggestion about this scheme. I detail below this programme:

The four-fold programme—This consists of (*i*) Cultural programme, (*ii*) Institutional programme, (*iii*) Organisational programme, (*iv*) Humanitarian programme.

(1) Cultural Programme

We must first of all know, from first-hand experience what is there and what is there not in Ayurveda. Before that, to complain of imaginary

wants, or press exaggerated claims will not be wise. The real worth of Ayurveda must be assessed first.

To adopt the modern technique of study according to each subject, research must be done to collect the relevant matters under each subject together and arrange in the modern way. This will make the approach of the subject easy for the student. This will also enable us to judge about the standard of the material for teaching whether it is comparable to that of modern science. If found wanting, attempt must be made to raise the standard by appropriate research work. An attempt has now been made to raise the standard of ayurvedic education equal to that of the modern medical science. It is not an easy task. Every science grows by research and the last word in the domain of knowledge can never be uttered. An inferior type of so-called physician will be the inevitable lot if the ayurvedists do not cry halt to the present superficial, confused and imperfect system of ayurvedic education prevailing in the country.

Research:—(*a*) Search the extant ayurvedic literature in all its 8 divisions and collect, classify, rearrange and properly interpret the findings and reorient them in modern lines. (*b*) Then carry research in order to incorporate new addition.

This part of the programme may be summarized as follows:—

(*a*) Engage competent workers to prepare ayurvedic text books on anatomy, physiology, pathology, clinical medicine, surgery, gynæcology, hygiene and preventive medicine, medical jurisprudence and toxicology.

(*b*) Establish a central pharmacy or engage competent workers to find out the methods of

(*i*) obtaining crude drugs

(*ii*) preparation of drugs

(*iii*) standardisation of drugs with a view to find out therapeutic and lethal doses of preparations in use.

(*iv*) assaying the *rasa, guna, veerya, vipaka* and *probhava* of known drugs and to apply the same on drugs unknown to ayurveda *e.g.,* cinchona, sulphonamides, etc.

(2) Institutional Programme

Establishment of Universities, Teaching Institutions and Hospitals—I may venture so far as to say that research institutes should be established first and colleges will be established only when basic researches have been done and sufficient text books have been published embodying the recent researches which will enable the teachers to give a real and sound teaching based on experimental facts. Ayurveda will then be able to stand any scientific test and scrutiny. That will possibly be the only method by which the standard of teaching in Ayurveda may be raised to that of the colleges teaching modern medicine.

The scheme under this head is as follows:—

(*a*) Establish new institutions and reorganise the existing ones so as to be competent to teach Ayurveda in all its branches. This should be done as an immediate measure but as the ultimate aim is to have one system of medicine in India incorporating Ayurveda and modern medicine by synthesis or amalgamation, it must be imperative that in course of five years or so all of them must be capable of being raised to the standard and equipment of medical colleges affiliated to the Universities. From this point of view, no existing institution need be reorganised which will ultimately be incapable of being raised up to the adequate standard.

(*b*) Train teachers (theoretical, practical and applied sciences) as per text books prepared under the cultural programme above.

(*c*) Students—Premedical course—they must pass I.Sc. with chemistry, physics and biology. The student must pass in Sanskrit in the Matriculation Examination and further training in Sanskrit should be given in the ayurvedic college.

Preclinical course—anatomy, physiology, pharmacology and *Darsana Sastras.*

Clinical course—pathology, medicine, surgery etc.

(*d*) Find out the disadvantages of which the ayurvedic practitioners are suffering at present and rectify them in the new course of study.

(*e*) Establish museums, herbaria, libraries, pharmacies with exhibition of (*i*) collection, (*ii*) methods of preparation, (*iii*) appliances, (*iv*) standardisation, (*v*) storage etc. of preparation.

(3) Organisational Programme

Reorganise the association of ayurvedic practitioners *viz.,* the existing All-India Ayurveda Mahasanmilan and other bodies with a view—

(*a*) to improve the present status of ayurvedic practioners,

(*b*) to control the unwanted practitioners which constitute a great part of the existing profession,

(*c*) to cooperate with the state in taking efficient steps to control the profession,

(*d*) to impress on proper colection, preparation and sale of drugs and protection of the pharmacists,

(*e*) to contact with Government, Universities, District Boards, Corporation etc. for proper recognition of the ayurvedic practitioners.

(4) Humanitarian Programme

The munificent public are doing their part by establishing hundreds of charitable dispensaries throughout India. The ayurvedic practitioners must also come forward and equip themselves adequately, which they do not possess at the present moment—

(*a*) to give proper service in minor surgery etc., in the dispensaries,

(*b*) to do relief work during natural disorders *e.g.,* flood, earthquake, fire, etc., and during man-made disasters *e.g.,* riots, famine, air raids, etc.

Supplement to the Above Four-fold Programme

Attempts are now made to find possibilities of utilising the existing *vaidyas,* as an immediate measure, in any composite scheme of health service in rural areas. I may submit the following programme for this purpose.

(*a*) As personnel to the existing hospitals—Select the most suitable young *vaidyas* of to-day who might be competent to take charge of hospitals after

further training. Give them a refresher course for 6 months particularly, on surgery, gynæcology, hygiene and preventive medicine, medical jurisprudence and toxicology and put them in charge of hospital duties. They must have practical training on operative surgery on the dead body, operative midwifery on dummies and minor operation on patients.

When put in charge of hospital duties as surgeons they must be put as assistants for about 2 years and then put in independent charge.

(*b*) Establish new ayurvedic hospitals and put these men in independent charge. Arrangements must be made for maintaining adequate supervision of these hospitals.

CASE NOTES

A CASE OF SYMPODIA

P. S. DASTUR, M.S., B.M.S.,
Professor of Anatomy, Grant Medical College, Bombay

Sympodia are extremely rare. Here is an interesting case in which the failure of development has gone to the extreme. The foetus about 7 months has the upper part of the body with head, face, neck and upper extremity properly developed. The surface skin with hair also looks normal for the age. From the caudal end of the trunk a tail like structure about 4" long was projecting forwards and slightly upwards in the midsagittal line. At its free extremity it was tapering to a point. The inferior extremities were absent. There were no anal or genito urinary apertures on the surface. At about the middle of this projection, a joint could be felt with a patella like structure situated on its dorsal surface.

On dissection, it was found that the tail like projection consisted of two segments only a proximal and a distal. Each segment had only one bone forming its skeleton. The bone of the upper segment was femur with two condyles, but its normal posterior surface was facing anteriorly. The upper end of the bone of the lower segment resembled the condyles of the tibia, but below the condyles the bone tapered very rapidly to a pointed extremity. The joint between the segments was resembling a reversed knee joint with the normal anterior surface and the patella situated posteriorly. There were only two femoral and the two tibial condyles, and they were normal in shape. There was only *one hip joint* situated dorsally in the midsagittal line. The head of the femur was flattened from before backwards, with long axix in the transverse direction. Ischial and pubic parts of the hip bone were completely absent and the iliac parts were poorly developed.

On opening the abdomen, the liver, stomach, pancreas and spleen and small intestines were in normal position but the descending colon terminated into a blind tapering end beyond which there was no indication of any pelvic colon or rectum. The blind tapering end of the descending colon was not attached to any structure. There was no trace of any of the pelvic organs *e.g.*, the urinary bladder or uterus and vagina. On displacing the small intestines it was revealed that the kidneys were absent but suprarenals were present in their normal position. On the right side, the renal

PHOTOGRAPH OF THE REPORTED CASE OF SYMPODIA

region was occupied by a translucent sac about ¾" in diameter. From this sac, a thin translucent strand was passing downwards and forwards to the anterior abdominal wall. From this strand, another translucent strand was taking origin and passing in between the external and the internal obliques of the right side. It ended in what looked like a testis. On the left side the corresponding gland was situated between the transversalis and the internal oblique. One of the glands was subjected to histological examination and was confirmed to be testis. The abdominal aorta terminated in three branches; two lateral and one median. The median artery, the largest of the three, was first running down and then taking a bend upon itself reached the lower part of the anterior abdominal wall, and entered the umbilical cord.

In sympodia the developing lower extremities get rotated outwards instead of inwards as is normally the case, so that the preaxial border comes on the outer aspect of the limb instead of the inner. Together with this abnormality in rotation, the two lower extremities show varying degree of fusion of its parts. The pelvic organs are imperfectly developed and the

kidneys are absent. The external appearance of the lower extremities vary considerably. In the least abnormal cases the two outwardly rotated limbs are united together by a fold of skin somewhat as in syndactyl. In other cases there is a lesser or greater degree of fusion of the two outwardly rotated limbs. The femurs may be fused in lesser or greater parts of their lengths. There may be two separate heads articulating with two separate acetabula, or there may be complete fusion of femurs with only one head situated in the middle line. There may be two tibiæ and two fibulæ, or two tibiæ and one fibula, or only one tibia without a fibula. In foot segment there may be two feet separated by a groove, or there may be only one foot with varying number of digitis, which may number up to ten or eleven. In other cases the foot segment may be completely absent as in the case noted above. In all these cases there is one constant feature *i.e.*, the outward rotation of the inferior extremities, with patella situated on the posterior aspect, and the greater trochanter of femur on the inner aspect of the abnormally rotated extremities. The case cited above is an extreme case in which the foot segment is entirely absent. (sympus apus).

Acknowledgment—My thanks are due to Dr. K. M. Masani, M.D., F.R.C.S., chief medical officer, Wadia Maternity Hospital, Bombay, for lending me the specimen for dissection; and Dr. P. V. Gharpure, M.D., the professor of pathology, Grant Medical College, Bombay, for sectioning and examining the genital gland.

The report would have been complete if the author could furnish in addition (*a*) an x-ray of the fœtus especially of the lower part of the trunk and the limb showing the bones and the hip joint, and (*b*) a line drawing of the picture of the dissection of the abdomen after displacing the coils.—EDITOR, *J. Indian M. A.*

REITER'S DISEASE

K. D. LAHIRI, M.B., B.S.,
Senior Hony. Medical Officer,
Skin & V. D. Department, Medical College Hospital, Patna (Bihar)

The diagnosis of Reiter's disease is made by repeated urethral and prostatic smear examination by Gram's stain and by culture of the prostatic fluid for Nisseria gonorrhœæ. Most non-specific urethritis prove to be Reiter's disease.

Reiter's disease is but a syndrome consisting of non-specific urethritis, conjunctivitis and cutaneous lesions.

Recently a case of subclinical pellagra came under the author's observation where the repeated examinations of the prostatic smear were negative to N. gonorrhœæ, the conjunctival smear was sterile and did not respond to any therapy. Sulphonamide-penicillin therapy together with prostatic massage repeatedly did not improve the urethral condition.

Treatment for subclinical pellagra was given by oral nicotinamide therapy combined with vitamin B-complex injections and a diet of milk and liver for about 2 to 3 weeks completely cured the condition.

CONCLUSION

The value of vitamin B-complex therapy in non-specific urethritis has been observed. Whether vitamin B-complex deficiency has to do anything with the non-specific urethritis or is a factor in the etiology of Reiter's disease is a question which remains to be worked out by venereal specialists. Penicillin has no value in non-specific urethritis (Lahiri, 1947).

REFERENCE

LAHIRI, K. D.—Penicillin in V.D. Pp. 23, Himalaya Publications, Patna (Bihar), 1947.

AN UNUSUAL CASE OF MALARIA

B. N. SINGH, CAPT., I.M.S. (LATE)
Bhagalpur Sadar Hospital, Bihar

Patient named Sanichar Mahto, a labourer, aged 30 years was admitted into the hospital on 20-3-47 at 8 p.m. with fever and restlessness. He came to the hospital across a distance of 15-20 miles partly on conveyance and partly on foot. Clinical examination of the case gave the following findings. The patient was restless, had anxious look, there was intense thirst, the tongue was clean but dry, skin warm and dry; temperature 99·2°F., spleen palpable upto 1" below the costal margin, and he responded to questions. But the most alarming sign present was that the pulse was not palpable at the wrist except as occasional flickering. The apex-beat was visible at its normal site, and was localised. The heart sounds were short and sharp, specially the first sound, and they resembled tic-tac rhythm or the fœtal heart-sounds. The blood-pressure was immediately taken and gave a reading of 65/50 mm. Hg. the pulse-pressure being 10 mm. Hg. The pupillary-reflex to light was present.

The patient was given water by mouth and gradually he took sufficient quantity in a quarter of an hour, but he complained of distension of the stomach.

TREATMENT GIVEN

(1) Coramine 2 c.c. stat.
(2) I.V. glucose 25% 25 c.c. (8-15 to 8-30 p.m.)
(3) I.V. Normal Saline was started at 8-15 p.m. One pint was given in 15 minutes. The pulse seemed just to be coming up. Another pint was given in the next half an hour after which a feeble pulse had come up. It was not considered advisable to stop at that point and another pint was given in the following 45-minutes when the pulse had regained a fair volume and tension. But this was detected coming down again after an hour and another one pint the total making 4 pints was given in the next hour after which the pulse maintained continuously.

While the I.V. saline was being given, a blood-film of the patient was examined under artificial light. It showed mixed B.T. and M.T. infections. The infections were not heavy as one or two parasites were found in every third or fourth field. The parasites seen were trophozoites.

(4) Quinine 10 grains in 10 c.c. of distilled water was given intramuscularly at 8-25 p.m. Administration of quinine by intravenous route was not adopted because of low blood-pressure and the oral route was not relied upon because of the probable inhibition of absorption from the alimentary canal due to circulatory crisis. But this was followed after an hour by 10 grains of quinine by mouth in a mixture which was repeated in the morning. The quinine mixture was given alternating with an alkaline mixture thrice daily for the next two days after which a course of quinacrine was given. The patient complained of slight dysuria (burning sensation at the time of micturition) next morning which disappeared without any further interference.

Discussion

Recovery of the pulse or bringing up of the blood-pressure was the prime and emergent consideration of the case. The patient was likely to collapse before simple quinine therapy by any route was going to be effective. Suggestion of any other method for quickly bringing up the pulse more efficiently and conveniently than I.V. normal saline in a well equipped hospital or by any other alternative method in less equipped places would be welcome.

The pathology of such a case is not clear and requires further informations for elucidation. The patient and his companions gave no history of profuse perspiration. The skin was warm and dry and not cold and clammy which is more common with acute peripheral circulatory failure. Malaria has not so far been known to produce toxins which cause peripheral circulatory paralysis. Cyanosis was not present. Acute diminution in the cardiæ output was one the possible cause of circulatory collapse. It could not be one of the common cerebral cases as the mind was clear.

ONSET OF TYPHOID FEVER WITH APHASIA

P. N. LAHA, M.D.

From the Department of Diseases of Children, Medical College, Agra

The usual mode of onset of typhoid fever is insidious. But it may be sudden with important deviations from the common course. The terms meningo-typhoid, pneumo-typhoid and nephro-typhoid are used in connection with the onset of typhoid fever when it is associated with pronounced, sometimes sudden, nervous manifestations, with pulmonary symptoms or with symptoms of an acute nephritis respectively.

The term 'aphaso-typhoid' has been coined by the present author to describe typhoid fever having an onset with aphasia. Three cases of 'aphaso-typhoid' have been described below.

Case Reports

Case 1—K., 2½ years, Muslim female child, was admitted with the complaints of sudden onset of aphasia and fever, duration 4 days. On examination —Acutely ill, temperature 104°F., pulse 120, respiration 30 and coated tongue. There was complete inability to speak. Neck soft with negative Kernig's sign. Heart, lungs and abdomen clinically normal. Fundus clear. Investigations.—Blood: Total leucocytes 5,000; polymorphs 58, lymphocytes 40, large mono 2; no parasites. Cerebrospinal fluid: Sugar 40·0 mgs., protein in traces, chloride 670 mgs.; cells 2 per c.mm.; no micro-organisms. Blood culture: B. typhosus isolated. Widal test (on the 8th day of fever) T "H"+1/125. Progress and treatment.—She was treated on usual typhoid lines. On the 15th day of fever she developed perforation and was taken away by her relatives against medical advice. Till the day of her discharge from the hospital the aphasia persisted.

Case 2—S., 4 years, Hindu male child, was admitted with aphasia, continued fever and cough, duration 10 days. On examination.—Temperature 101·8°F., pulse 130, respiration 26 and furred tongue. There was complete aphasia. Liver enlarged 1". Lung bases congested. Other systems showed no abnormality. Investigations.—Blood: Total leucocytes 7,000; polymorphs 71, lymphocytes 28, eosinophils 1; no parasites. Widal T "H"+1/250. Progress and treatment.—Routine typhoid line of treatment adopted. The aphasia gradually disappeared from the 13th day of illness. Discharged cured after 3 weeks.

Case 3—A.M., 7 years, Muslim male child, was admitted with the complaints of aphasia and irregular fever, duration 7 days; restlessness and delirium, duration 1 day. On examination.—Complete loss of voice, toxic, irritable, temperature 97°F., pulse 90, respiration 25 and heavily coated tongue. Spleen palpable, liver enlarged 1½". Lung bases congested. Neck rigid and Kernig's sign positive. Reflexes normal and Babinski's sign flexor. Investigations.—Blood: no parasites. Cerebrospinal fluid: Sugar present, protein in traces, chloride 850 mgs.; cells 8 per c.mm.; no micro-organisms; no pus cells. Urine normal. Widal (13th day) T "H"+1/250. Progress and treatment.—He was put on routine typhoid line of treatment. The temperature ranged from 99°F. to 101°F. He started speaking from the 21st day of illness. After 4 weeks he became afebrile, and later was discharged cured.

Comments

Aphasia, occuring as a complication of typhoid fever, is not unknown. But the onset of typhoid fever with aphasia is not described in literature. The pathogenesis is not definitely known. It may be suggested that it is due to toxic spasm of the blood vessels supplying the speech area of the brain. It does not connote a bad prognosis. The voice is only temporarily lost. No special treatment is necessary for the aphasia.

Acknowledgment—My thanks are due to Major-General H. C. Buckley, M.D., F.R.C.S., C.S.I., I.M.S., Principal, Medical College, Agra, for his very kind permission to publish the reports of the cases.

JOURNAL OF THE
INDIAN MEDICAL ASSOCIATION
CALCUTTA, JUNE, 1947

OPERATION IN HEAD INJURIES

That head injuries are relatively common, increasingly so, and that they are associated with a considerable risk to life, are admitted. Estimating the damage that the skull and its contents may have received, is the most important part of the examination in a case of head injury. Individually or in any combination, there may be—(1) Injury of the scalp alone (2) Fracture of the skull vault (3) Fracture of the skull base (4) Concussion (5) Cerebral compression or (6) Cerebral laceration.* Unfortunately, the basis on which this classification is made, lacks uniformity: Concussions and compressions are clinical manifestations, while scalp wounds and fractures are local pathological effects. But it has the merit of being practical, as well as comprehensive.

Indications for operative interference in any of the above conditions or certain complications arising therefrom may appear at varying intervals from the time of injury. Their recognition and the adoption of the correct procedure at the optimum period of time determines the prognosis of the case. Thus,

I. IMMEDIATE OPERATION is indicated in:

(a) *Cases of open wounds*—arrest of hæmorrhage is even more imperative in injuries of the scalp than elsewhere in the body.

(b) *Some cases of depressed fractures* e.g., when associated with fits. The existence of a depressed fracture does not by itself justify opening the skull: Symptoms are generally due to œdema, *i.e.*, accumulation of fluids in the perivascular spaces (rather than actual swelling of nerve cells and nerve fibres). Operation in these cases is therefore indicated only when treatment by elevation of the head; restricted fluid intake by mouth and S. S. Mag. Sulph; intravenous hypertonic saline or glucose; S. S. Mag. Sulph. enemata; and lumbar puncture, cautiously carried out —fail to relieve symptoms of increased intracranial pressure.

II. OPERATION WITHIN 12-24 HOURS of the injury may become necessary in cases of *extradural hæmorrhages*. The commonest source of hæmorrhage of this type is from the middle meningeal arteries. The presence of a 'lucid interval' lasting several hours is of utmost diagnostic importance. The condition is one of the few real emergencies in head injuries: The appearance of symptoms of a local lesion in the form of paralyses following the 'lucid interval' is a clear indication for operation.

III. OPERATION WITHIN THE FIRST WEEK is indicated in:

(a) *'Early' subdural hæmorrhage*—here the lucid interval lasts several days—about 5 days in most cases. The paralysis is confined to one side of the body, even though the hæmorrhage may be bilateral. Treatment consists in draining the now fluid clot, after opening the skull. In 'early' cases, a capsule does not form and if necessary, the clot may be completely washed out through a second hole made in the skull. It should be noted that in these cases, as the sub-arachnoid space is not involved, there is no hæmorrhage in the C.S. fluid obtained by lumbar puncture.

(b) *Persistent traumatic delirium*—here the patient continues to exhibit a state of hyperirritability. The underlying pathology is a state of œdema. In these cases, energetic treatment for diminution of intracranial pressure by diminishing the venous congestion is harmful. A lumbar puncture should be carried out without the head end of the patient's bed being raised; the C.S. fluid pressure should be taken and is usually found to be normal or even lower, as a direct effect of the trauma itself. The prognosis is not unfavourable in these cases.

IV. OPERATION BETWEEN THE FIRST AND THE SECOND WEEKS may become necessary in the following conditions:

(a) *Subcortical hæmorrhage*—in these cases, the symptoms appear seven to ten days after the injury: the softening of the brain matter that is responsible for these symptoms takes at least a week to establish itself and in typical cases, fits followed by signs of paralysis manifest themselves between the first and the second weeks.

(b) *Some cases of brain abscess*—while 'acute abscesses' are fulminating in onset and are really of

[1] FRASER, SIR J.—*Brit. M. J.*, 1:739, 1937.

the nature of a diffuse encephalitis, and 'chronic abscesses' take about three months to manifest themselves, there is yet another variety which may be called 'sub-acute abscesses' which develop symptoms in about 7 to 14 days. Increasing drowsiness, a diminishing pulse rate and an increase of the cellular contents of the C.S. fluid are clear indications of operative interference. Localization of the pus by repeated punctures of the *dura mater* with a ventricle-puncture needle, after craniotomy followed by sealing with diathermy and slow drainage is perhaps the method of choice.

V. OPERATION WEEKS OR MONTHS AFTER THE INJURY may become necessary in the following conditions:

(a) *'Late' subdural hæmorrhage*—the condition is also known as 'pachy meningitis hæmorrhagica interna' or 'chronic subdural hæmatoma'. It is typically seen in patients after the age of 50 years and is gradual in its onset: Mental changes are a marked feature and the patient tends to be alternately lively and unconscious. Encephalography by air replacement shows a filling defect over the convolutions of the brain. The procedure is however much more disturbing to the patient than a small exploration under local anæsthesia, which should preferably be carried out on either side of the skull. The treatment is along the lines for 'early' cases, except that here a well-formed capsule may have to be tackled.

(b) *Jacksonian epilepsy*—Here care must be taken to see that the 'march of the fit' is in the same order in the patient in every instance; that there is no inherited tendency for convulsions; that there is evidence of a local lesion, *i.e.*, a weakness of localised regions must be demonstrable in the patient between fits; and that skiagraphy demonstrates a bony injury actually over the region held responsible for the symptoms.

(c) *Persistent cerebral œdema syndrome*—the features of this condition are: headache, especially after physical or mental exertion; drowsiness during the day, most markedly in the afternoons and wakefulness at night; evidence of ready fatigue and mental deterioration; and giddiness, especially with a sudden change of posture.

(d) *Traumatic pneumatocele* and *rhinorrhœa* are conditions where operative interference may become necessary many weeks or months after the initial injury.

DR. S. N. SEN GOLD MEDAL

In memory of his deceased son, Dr. S. N. Sen, B.SC., M.B. (CAL.), Kaisar-i-Hind of Jamalpur (Dist. Monghyr) E. I. Ry. has desired us to announce the offer of a Gold Medal for the best paper to be read at the 1947 session of the All-India Medical Conference to be held at Bombay during Christmas week, on "INTESTINAL OBSTRUCTION AND OTHER COMPLICATIONS OF APPENDICITIS, HOW TO PREVENT AND TREAT SUCH COMPLICATIONS AND SAVE THE PATIENTS FROM THE CRUEL SUFFERINGS AND DEATH".

The undersigned will be pleased to receive six typed copies of articles on the above subject from research workers and investigators. The last date of receipt of papers will be 30-9-1947.

23, Old Hindusthan Buildings,
Calcutta 13.

P. K. GUHA
Acting General Secretary, I.M.A.

CURRENT MEDICAL LITERATURE

Diet and Liver Disease

Witts (*Brit. M. J.*, **1**:1 & 45, 1947) has successfully accomplished a formidable task of reviewing our present knowledge of the significance of nutritional factors in the causation and treatment of liver diseases. It is obvious that considerable differences exist between the types of liver disease produced artificially in experimental animals and those most familiarly known in human subjects; at the same time the lesions found under experimental and clinical conditions are often sufficiently similar to make their comparison instructive.

The infiltration of the rat's liver with excess of fat, which is taken by Witts as a starting-point in approaching his subject from the experimental side, has been well known to nutritionists for many years. The fat content of the liver may readily be increased tenfold or more by including much fat in the diet and simultaneously withholding substances which facilitate the dispersal of fat from the liver. These 'lipotropic' agents include choline, a constituent of lecithin, and methionine, an amino-acid containing sulphur which is present in casein and other proteins of high nutritional value. More recently it has been found that the liver of animals kept for some months on a diet which produces fatty livers eventually develop cirrhosis, usually with the formation of a brown pigment known as "ceroid" (Lillie and others—*Pub. Health Rep. Wash.*, **56**:1255, 1941). Since in this country the scarcity and high price of spirits has practically eliminated alcohol as a cause of cirrhosis, it is interesting to speculate whether the 2,000 cases which are usually in process of dying from this disease can be due to nutritional deficiency. Witts (*loc. cit.*) points out that while the position in England is uncertain there is ample evidence that liver diseases are associated with faulty nutrition in the Tropics. Thus fatty infiltration of the liver occurs in 'kwashiorkor', or malignant malnutrition, a disease which is common in grossly malnourished African natives. Cirrhosis of dietary origin is common in children in India, Ceylon, and China.

Focal necrosis of the liver is another lesion caused by deficiency of protein in rats, its onset being sudden rather than gradual as in the development of cirrhosis. The missing nutrient here appears to be cystine, another aminoacid which contains sulphur. Cystine, unlike choline and methionine, has no lipotropic action, and its addition to the diet in excessive amounts appears to favour the development of cirrhosis. Witts reminds us that sulphydryl groups are concerned in the vital enzyme systems of the liver, which may explain why liver cells deprived of cystine and methionine should become unduly vulnerable to the toxic action of chloroform, carbon tetrachloride, or arsenical drugs. The whole story of the relation of liver damage to diet, however, appears to cover a wider field. Though dosing with sulphur compounds before or very soon after anæsthesia with chloroform is effective in preventing liver damage in suitable circumstances, it is clear that under other conditions widely different substances may be equally effective. Thus the increased vulnerability to toxic agents due to starvation may be checked by giving carbohydrate.

Information obtained from animal experiments and the application of it to the benefit of human sufferers from liver disease appears to favour the maintenance of sound general nutrition rather than the extensive exploitation of choline, methionine, or cystine as drugs. In regard to cirrhosis better results are obtained by giving a good diet in protein rather than by attempting to lighten the work of the liver by giving a diet high in carbohydrates. Treatment with methionine and choline, according to Morrison (*Ann. Int. Med.*, **24**:465, 1946), is beneficial even when the diet is already rich in protein but the experience of other workers has been less convincing. Acute necrosis of the liver in the human subject is a much rarer disease than cirrhosis and must be diagnosed with care. It is not surprising, therefore, that our knowledge of its dietary treatment should be scanty. In the present state of doubt the clinician may well concentrate on the relief of shock with fluids, glucose, and milk though the analogy with experimental liver necrosis suggests that research on the value of proteins and amino-acids might be well rewarded. On the other hand infective hepatitis, in common with the closely similar homologous serum jaundice and post-arsenical jaundice, appears to have no parallel in the experimental animal. However, in recent years opportunities for clinical research, particularly among troops, have been all too frequent. The results of treatment with relatively small doses of choline, methionine, and cystine have on the whole been unconvincing, and in view of the benign nature of the disease the intravenous injection of the large doses calculated to be necessary from the results of animal experiments seems quite unwarrantable. Witts advises a light diet with plenty of partially skimmed milk, but considers that it does not matter much what the patient eats provided he keeps on eating. An interesting point, which appears to emphasize the importance of diet in infective hepatitis, was noticed during the war: poorly nourished coloured troops, though relatively free from the disease, had, when once infected a much higher mortality rate than that of white troops.

While therefore we have considerable knowledge of the specific nutritional factors concerned in the production and prevention of liver diseases in experimental animals, we can still only recommend that human liver diseases should be treated by a diet which is generally sound, wholesome, and otherwise suitable. Possibly this gap between theory and practice may be explained by the fact that experimental knowledge, though extensive, is still far from complete. The study of experimental liver disease is indeed complex. Thus excess of fat, excess of cholesterol, imbalance of vitamins of the B complex, and even starvation all tend to increase the fat content of the liver. Choline, protein, methionine, the cyclic alcohol inositol, and the pancreatic hormone known as lipocaic are among the substances having lipotropic action, but they are effective in different degrees according to the factors tending to cause the fatty infiltration. Recent work has suggested that the situation may be complicated by the interplay of many other substances. Dam and Kelman (*Science*, **96**:430, 1942), for example, have claimed that in certain circumstances vitamin E has the same action as inositol, and that it appears to be necessary for the formation of lipocaic. In the production of cirrhosis certain fats are more active than others, and codliver oil in particular seems to promote the formation of ceroid pigment. On the clinical side, moreover, further complications may arise through the secondary effects of disease. Thus the metabolism of vitamin A, stored mainly in the liver, is disturbed by both acute and chronic human liver diseases, and in cirrhosis the reserves are often completely exhausted. We are faced, therefore, with a complicated network of interrelated biochemical systems for the unravelling of which prolonged and intensive research will undoubtedly be necessary.—*Brit. M. J.*, **1**:57, 1947.

Nitrogen Balance

Protein intake and the maintenance of "nitrogen balance" have assumed much practical clinical importance. Success has followed the practice of maintaining nitrogen balance in a variety of clinical conditions through the use of parenterally administered protein hydrolysates or amino acid mixtures. A prolonged negative nitrogen balance may lead to a decrease in the plasma protein level, œdema, anæmia, lowered resistance to infection, increased susceptibility to certain toxic substances, the development of fatty liver or perhaps other serious sequelae.

Important is the essential amino acid content of the protein the protein hydrolysate or the amino acid mixture itself. Studies on human subjects have repeatedly shown that, if any one of the essential amino acids is lacking, the others are poorly utilized or may be excreted with a resulting "negative nitrogen balance". This phenomenon explains the "poor biologic value" of certain dietary proteins, such as gelatin, which is low in tryptophan, and gliadin of wheat. A recent comprehensive investigation has demonstrated that there is a close mathematical correlation between the biologic value of a protein and the maximum relative percentage deficiency of any one of its component essential amino acids.

Other factors as yet poorly understood adversely affect nitrogen balance in man, as is seen in severe infections, after trauma or following burns. In each of these conditions the negative nitrogen balance due to an excessive loss of nitrogen in the urine may be so severe that extremely large increases in protein intake, orally or parenterally, are required to reestablish nitrogen balance.

One interesting explanation of the negative nitrogen balance suggests that increased amounts of one or perhaps more essential amino acids are required following burns or trauma for the repair of the damaged area or for detoxication. The body is thus "robbed", so to speak, of one or more essential amino acid, and the other amino acids cannot then be utilized and are excreted perhaps after being broken down to urea and other degradation products. In support of this concept the English workers have found that the administration of the essential amino acid methionine to severely burned subjects is followed by a significant increase in nitrogen retention. This interesting observation merits further careful investigation.—*J.A.M.A.*, **133**:247, 1947.

Sudden Death in Young Men

The Army Institute of Pathology received reports between 1942 and 1946 of approximately 1,000 sudden nonaccidental, noncombat deaths of apparently healthy soldiers aged 18 to 40. Pathologic examination of between 700 and 800 of these, reviewed by Moritz and Zamcheck (*Arch. Path.*, **42**:439, 1946) reveals that approximately 350 of the deaths were caused by previously unrecognized heart disease, almost 300 of which were due to coronary arteriosclerosis. The postmortem examinations disclosed severe atherosclerosis of one or both coronary arteries, and thrombotic occlusion was recognized in approximately 25 per cent. of the 91 cases involving sudden death from nontraumatic intracranial hæmorrhage, the bleeding was principally subarachnoid and appeared to have resulted from ruptured aneurysm of congenital or berry type in 69. Also included as a cause of sudden death was meningococcæmia, in some cases of which death occurred within twenty-four hours after onset of incapacitating symptoms. This group included 110 cases of the 350 fatal meningococcic infections reported. The records of 95 of these were sufficiently complete to analyze. Purpura or cutaneous petechiæ were recognized in over 80 per cent. Focal or massive adrenal hæmorrhages were encountered in 71 per cent. The authors believe that adrenal hæmorrhage in fulminating meningococcæmia is usually preceded by degenerative changes in the cells of the glomerular and fascicular zones of the cortex. Some 200 to 400 sudden deaths were classified as due to miscellaneous causes. The largest single causes was infection of the respiratory tract. Other causes included aortic rupture, encephalitis, nonmeningococcic meningitis and pulmonary tuberculosis. At least 140 sudden deaths were investigated in which the postmortem observations disclosed nothing abnormal.—*J.A.M.A.*, **133**:325, 1947.

Water Test in Diagnosis of Addison's Disease

Levy and others (*J. Clin. Endocrinol.*, **6**:607, 1947, Ref. *J.A.M.A.*, **133**:136, 1947) report the results of the water test at the Mayo Clinic between 1941 and 1945. The first procedure is based on the inability of patients with adrenal cortical insufficiency to excrete orally ingested water at the normal rate. The second procedure employs a formula which takes into account the volume of excreted urine and the clearances of urea and chloride from the blood. The delayed excretion of water, such as usually occurs in Addison's disease, will not by itself establish the diagnosis of the disease. False positive responses to the first procedure may occur in many seemingly unrelated clinical conditions. Such false positive responses usually indicate the presence of organic illness not necessarily Addison's disease. Normal diuresis following ingestion of water (false negative result of test) occurs relatively infrequently in cases of Addison's disease, having been found 9 times in 74 cases. When such a false negative result is encountered it is difficult to establish Addison's disease by any other diagnostic procedure. In the presence of adequate clinical evidence and failure of normal diuresis, the diagnosis of Addison's disease can usually, but not invariably, be established by the second procedure. This one occasionally give false positive results, but these occur with much less frequency than does delayed diuresis. False negative results occur even more rarely, and when they do it is again difficult to establish the diagnosis of Addison's disease by other laboratory criteria. Administration of sodium chloride, desoxycorticosterone acetate or adrenal cortex extract in amounts commonly employed in the treatment of Addison's disease did not seem in a limited number of cases to rectify the abnormal factors that account for the production of abnormal water tests. Patients having Addison's disease apparently lack the capacity to excrete at normal rates both orally ingested water and water given intravenously as 5 per cent solution of dextrose. From this it is concluded that, even if ingested water should be absorbed at a normal rate, its rate of excretion would be delayed.

A Simple Method of Estimating Blood Ketones

Dumm and Shipley (*J. Lab. & Clin. Med.*, **31**:1162, 1946) describe a method whereby acetone bodies in serum can be estimated with an error usually not exceeding 10 mgm. per cent, by the use of a simple technique employing a nitroprusside powder.

The powder consists of:—Sodium nitroprusside (very finely ground)—1 gm., ammonium sulphate—20 gm., and anhydrous sodium carbonate—20 gm.

The three ingredients are mixed completely but are not ground together. The powder, if kept dry at all times, is stable

for at least a year. The test depends upon the fact that the minimal blood level of total acetone bodies giving a definitely positive test (*i.e.*, a prompt and distinctive purple colour) is approximately 10 mgm. per 100 c.cm. The test is carried out by adding a drop of serum to a small pinch of the powder, 5 mm. in diameter, lying on a white filter paper. If a positive reaction is obtained, then 1 c.cm. of serum is mixed with 1 c.cm. of distilled water and a drop of the mixture is added to a fresh pinch of the powder. If a positive reaction is still present, additional portions of distilled water are added until the test becomes negative. The last dilution giving a positive reaction multiplied by ten gives the blood ketone level. For instance, if the last positive dilution contained 1 c.cm. of serum and 6 c.cm. of distilled water, representing a dilution of 7, the blood ketones would be 7×10, *i.e.* 70 mgm. per 100 c.cm. In a series of 25 tests, covering a range of blood ketones from 0-100 mgm. per 100 c.cm., it was found that, compared with accurate micro methods of estimation, the error with this simple method seldom exceeded 10 mgm. per 100 c.cm. It is pointed out that the degree of ketonuria does not always correspond to the degree of ketonæmia, and that in such cases this method provides a useful means of obtaining some idea of the level of the blood ketones, without elaborate laboratory apparatus.

Water, Salt and Heat Exchange of Men in Tropical and Desert Environments

Molnar and others (*Am. J. Hyg.*, **44**:411, 1946) give the following report based on comparative field studies of men observed in the California desert and the Florida tropics: The results show that the thermal stress in the desert is about 2 to 3 times greater than in the tropics. A tropical jungle-swamp, however, may exert a stress similar to that of the desert shade. Average 24-hour fluid intakes and sweat outputs were about two times greater in the desert than in the tropics, but the average urinary volume and urinary salt excretion were the same in both environments. Thus men increased their water and salt intakes in proportion to increased losses. Evaporative losses were correlated with solar intensity and dry-bulb temperature, but no correlation could be shown with relative humidity, air movement, or rectal temperature. Clothing diminished evaporative loss by about 100 gm. per hour. In the tropics about 72 per cent of the heat due to work was lost by evaporation, but in the desert all of this heat must be lost by evaporation.

Complications Following the Administration of Thiouracil

Beierswaltes and others (*Am. J. M. Sc.*, **212**:513, 1946) have collected ten fatal cases of agranulocytosis occurring during the administration of thiouracil from the literature and personal communication. All of the cases revealed a common pattern which the authors believe gives definite clues to follow in the prevention of fatalities due to this complication. The most satisfactory method of preventing fatalities from agranulocytosis is to warn the patient who is taking thiouracil to discontinue the drug promptly following the appearance of fever with or without sore throat, skin rash or adenopathy. If a white blood cell count and estimation of the neutrophil percentage shows a significant depression of the cells, then penicillin should be administered immediately until such time as the blood count becomes normal again. Thiouracil therapy may then be resumed but it should be recognized that there is a definite risk of recurrence of this agranulocytic reaction.

Other complications requiring thyroidectomy ultimately are febrile reactions, relative thiouracil resistance, nodular thyroid, large goiter, and failure of the patient to cooperate. The remaining complications occurring during thiouracil administration ordinarily do not require more than temporary cessation of the drug.

Psychic Factors in the Development and Treatment of Obesity

Freed (*J.A.M.A.*, **133**:369, 1947) writes that overweight has a strong effect on shortening the life span and increasing the development of degenerative diseases. There is little evidence that obesity is a glandular or metabolic disturbance. The psychologic factors in obesity are paramount, since the tendency to overeat is a strong drive for oral gratification. Any condition which increases the nervous or psychic tension of the person will cause an aggravation of this tendency. These tensions may also result from an organic disturbance. The glandular dysfunctions which contribute to obesity are those which increase psychic tension, namely meonpause, puberty, pregnancy and premenstrual tension. Treatment of the patient should be based on an understanding of the psychologic reasons for his overeating. The drug of choice is amphetamine sulfate (benzedrine sulfate), which is of inestimable value. The possibility of harmful side reactions *e.g.* dryness of the mouth, temporary exhilaration, insomnia and constipation from the use of this drug is relatively insignificant. The drug is commonly given in dosage of 5 mg. three times daily, 30 to 60 minutes before each meal. Other forms of treatment should be continued along with amphetamine to give the patient a sense of well-being—these are iron in cases of anæmia, œstrogens for the menopause, androgens or ammonium chloride for premenstrual tension, barbiturate drugs for nervousness and thyroid for those patients who show distinct signs of glandular deficiency. Thyroid therapy in most cases is of little value. The ideal treatment of obesity involves education of the parents to the use of proper eating habits for their children and other psychologic training which induces a satisfactory adjustment to life through emotional maturity.

Painful Feet

Cruickshank (*Lancet*, **2**:369, 1946) writes that a syndrome in which aching and stabbing pains in the feet were the chief features was observed among British and Australian prisoners of war in Japanese camps after six months on a diet low in B-complex and first class protein, but adequate in total calories. When the diet was increased in protein and the B-complex, particularly thiamin and niacin, fresh cases ceased to appear and the patients gradually recovered after a few months. The syndrome had almost completely disappeared before there was any increase in the riboflavin intake.

Crystalline thiamin given intravenously in a few cases produced no improvement but intravenous treatment with niacin brought about much improvement in 68·8 per cent of the cases in which it was used. No other pure vitamin of the B-complex was available for trial. It was felt that a deficiency of niacin is an important factor in the production of this syndrome.

Water and Salt Depletion

The body's water is distributed between two great compartments: the intracellular and the extracellular. The last includes both that within the vessels and that in the tissue interstices. Between these two compartments osmotic equilibrium is maintained chiefly by the electrolytes: within the cells, potassium and phosphate are the most important ions; without, sodium and chlorine. Although water can diffuse freely through the cell membrane, it is impermeable to the electrolyte ions. Dehydration may be either cellular or extracellular. The first arises when the body is depleted of water without loss of electrolytes; the osmotic pressure of the extracellular fluid rises and water passes out from the cells until equilibrium is restored. In the second, loss of extracellular electrolytes diminishes the tonicity of the fluid in this compartment; renal excretion of water proceeds until osmotic balance is again approached, reducing in consequence the total volume of extracellular fluid. Marriott (*Brit. M. J.*, **1**:328, 1947) prefers to speak of the first as "pure water depletion," and the second as "pure salt depletion"; he has stressed the immense importance to the clinician of the distinction between the two. Cellular dehydration follows deprivation of water, either because it is not available, or because it cannot be swallowed, or because physical weakness is so extreme that the patient is incapable of slaking his thirst. Its development may be accelerated by defective renal function necessitating the excretion of a dilute urine. Extracellular dehydration is the consequence of the increased loss of sodium chloride in a patient whose intake of water is sufficient to compensate for that transporting the lost salt. Such losses are the result of the removal or expulsion of what Burton called "excrementitious humours of the third concoction": sweat, saliva, gastric juice, bile, and pancreatic and intestinal juice. Sweating, vomiting, and diarrhœa account for most cases; but "removal" is added advisedly, for the gastric suction so frequently employed after abdominal surgery can lead to rapid depletion. For pure extracellular dehydration to occur the lost water must be replaced. In cellular dehydration thirst and oliguria are the clinical features; the urine contains normal or increased quantities of sodium chloride. In extracellular dehydration the clinical picture is more complex. There is no thirst; the urinary volume is normal, but, except in Addison's disease, sodium chloride is absent; cramps are common, and such accompaniments of a reduced plasma volume as syncopal attacks, hypotension, and hæmoconcentration make their appearance early and progress until peripheral circulatory failure closes the scene. Cellular and extracellular dehydration may occur separately, but it is by no means rare for them to be combined in the same patient.

There is substance in Marriott's criticism of the term dehydration, and good reason for using, as he suggests, labels denoting the underlying causes. But in these new terms there is some danger, perhaps, of these states acquiring the dignified status of "syndromes". It cannot be too greatly stressed that they are dynamic perturbations of the body's chemistry which may arise not only in the simple conditions cited but in circumstances of far greater complexity. The appreciation of the events which may lead to salt and water depletion is as important as the ability to recognize the developed disturbances, because in many instances preventive treatment can and should eliminate their occurrence. In this country the problems are more difficult than in the Tropics, where profuse sweating and choleraic diarrhœa are such obvious causes. In temperate climates water and salt depletion appear frequently during the course of disease-processes which may themselves seem to offer sufficient reason for the patient's deterioration. Their detection in these circumstances will tax the most careful clinician. The fundamentals of treatment are simple: to replace water where water is needed; and salt, where salt. The quantitative aspects are more difficult but none the less important; on this subject, and on the route by which fluid may be administered, Marriott gives much sound and practical advice. It is to be hoped that his admirable lectures will help to convince those physicians and surgeons who still require convincing that the day-to-day problems of water and salt metabolism are of such importance to their patients that their management should not be left in the hands of house officers and nurses.—*Brit. M. J.*, **1**:343, 1947.

Prognosis in Acute Nephritis

Satisfactory criteria for prognosis in acute nephritis are difficult to obtain. Cure rates of from 38 to 100% have been reported. The different systems of classification, together with the failure to recognize continued kidney damage when the patient is clinically recovered in the 'latent state," may account for the discrepancies between various authorities. Snoke (*Am. J. Dis. Child.*, **53**:673, 1937) has drawn attention to this and to the geographical differences in prognosis reported from the Pacific and Atlantic coasts of the United States. The prognosis of war nephritis, the nephritis of children, and post-scarlatinal nephritis may well vary from that of acute nephritis following infections such as tonsillitis. In selecting cases for follow-up investigations great care must be exercised not to include cases of chronic nephritis with no previous history of acute attack. The whole study of the prognosis after acute nephritis has been hampered by the lack of an agreed procedure for estimating the state of the lesion in the latent symptomless period.

Rudebeck (*Acta med. Scand. Suppl.*, 1946, No. 123) has used the quantitative estimation of the urinary sediment introduced by Addis (*J. A. M. A.*, **85**:123, 1925) in 1925, in conjunction with albumin estimation and measurement of the blood pressure and the concentrating powers of the kidney, in his re-examination of cases at the Lund Medical Clinic. In order to free himself from the welter of contradictory material in the literature, he collected from the records of the clinic (1910-39) only those cases which satisfied the following conditions: (*a*) unquestionable acute nephritis after the age of 10; (*b*) definite post-infectious onset, excluding specific fevers; and (*c*) no previous renal disease until three months in most cases, or three years at the longest, before admission to hospital. The material thus obtained was considered to be homogeneous and representative of post-infective acute nephritis in the adult. The criteria for recovery finally adopted were: (*a*) normal blood pressure; (*b*) urine albumin-free; (*c*) an Addis sediment count note exceeding one million red cells per 12 hours; and (*d*) duration of these negative findings for one year. The figures given for the 318 patients investigated in the follow-up agree well with the majority of previous statistics. Deaths were 6·6% of the total cases. Some 50 patients were not traced. Of the remainder—245 cases—69·4% recovered, 11·0% did not, and 19·6% were labelled uncertain. The interest of the investigation, however, lies in the attempt to estimate the effects of various factors on the prognosis. Rudebeck insists that the results must be

evaluated cautiously, despite stringent precautions taken to allow for sources of error.

Payne and Illingworth's (*Quart. J. Med.*, **9**:37, 1940) views on focal nephritis were borne out. Many patients behaving as cases of focal nephritis progressed to a chronic state. There was no evidence that the severity of the attack influenced the long-term prognosis. The risk of death in the acute stage was much increased when almost complete anuria or heavy albuminuria was seen, but the degree of the hypertension, hæmaturia, and œdema could not be shown to have any prognostic significance. Osman (*Guy's Hop. Rep.*, **86**:93, 1936) believed that recurrent acute attacks of nephritis did not prejudice the recovery rate, and 40 such cases were analysed by Rudebeck. He too found it impossible statistically to prove a bad prognosis in these cases. Pregnancy was demonstrated to have no effect in flaring up a past nephritis, thus agreeing with Wellen, Welsh, and Taylor (*J. Clin. Invest.*, **23**:742, 1944) who found that the kidney function was unchanged in two chronic nephritics who went to term. Analysis of the effect of rest in bed showed that patients who were going to progress to chronic nephritis did so whether they were confined to bed early or not, and it could not be proved that the prognosis was any better if the patient was kept at rest for long periods. There was agreement with the view of Addis (*Johns Hopk. Hosp. Bull.*, **49**:203, 1931) that the fate of the kidney is decided when infection occurs, and that treatment has little effect on the eventual course. Tonsillectomy could not be shown to have any beneficial effect in these cases.

From this it would seem that a good prognosis may be given in cases which survive the acute manifestations, of whatever severity, and which recover completely, in Rudebeck's sense, before discharge from hospital. The prognosis must be guarded if residual symptoms are present at discharge and if they persist more than one year, or are severe, chronic nephritis may be confidently awaited. Repeated acute attacks, pregnancy, and tonsillectomy were not shown to alter a prognosis made on these lines.

In the literature on nephritis, as Rudebeck points out, "the distinction between knowledge and belief appears not always to be maintained with sufficient stringency". It is to be hoped that further careful studies of this kind will be made which, if in agreement with each other, will afford a rational basis for estimating the effects of treatment and the ultimate prognosis in acute nephritis.—*Brit. M. J.*, **1**:458, 1947.

Prognosis of Primary Pleurisy with Effusion

Thompson (*Brit. M. J.*, **1**:487, 1947) writes that observation of 190 patients with primary pleurisy with effusion shows that one-quarter of all such patients developed systemic tuberculosis within five years. Nearly half the cases arose within one year of the initial pleurisy. No case has been found to occur after five years.

Of the tuberculous lesions that developed 15% were extrapulmonary. The remainder first became evident in the lung, though in either case spread to other systems tended to occur, as in any similar lesion acquired in other ways.

The death rate for the five-year period was 3·5%.

The age of the patient did not seem to influence either the incidence or the character of any subsequent tuberculosis.

Antibiotics in Biliary Disease

Chemotherapeutic drugs which were active against the coli-typhoid organisms and were excreted and concentrated in the bile would have considerable value as a substitute for or adjunct to surgery in cholangitis, cholecystitis, and empyema of the gall-bladder, and they might cure those chronic typhoid carriers in whom the gall-bladder has proved to be the reservoir of the organism. The sulphonamides, penicillin, and streptomycin are excreted in the bile of healthy men and animals, but it does not necessarily follow that these substances will be similarly excreted if the liver or the biliary tract is diseased or functioning poorly. Thus, Zaslow *et al* (*Surg. Obstet. & Gynec.*, **84**:16, 1947) have shown that where there is clinical or laboratory evidence of liver disease and dysfunction, excretion of penicillin and streptomycin in the bile may be absent or reduced, whereas if the biliary tract is returning to normal function after sugical drainage these drugs are excreted in the bile. These American workers agree with Mr. E. G. Tuckwell, who reported his findings at the Royal Society of Medicine on March 5, in finding that, with normal liver function, the level of penicillin is usually higher in the bile than that in the blood, within the first 2 hours after parenteral injection, whereas streptomycin is usually less concentrated in bile than in blood and reaches its peak rather later than does penicillin. Indeed, Zaslow *et al.* suggest that a biliary level below 0·5 unit of penicillin per c.cm. after an intramuscular dose of 15,000 units, or below 1·5 units of streptomycin after the injection of 100,000 units, is an indication of impaired liver function.

These drugs may reach the gall-bladder bile either by aspiration through the cystic duct or passage through the blood-vessels in the wall of the gall-bladder. Normally, as Tuckwell showed, penicillin is present in the gall-bladder bile and may reach higher levels there than in the hepatic ducts, probably through concentration of the bile by fluid absorption. However, when the cystic duct is obstructed, penicillin is not found in gall-bladder bile, showing that the drug enters the gall-bladder through the biliary ducts and not through the blood-stream. Thus, in a group of 25 patients who were to undergo cholecystectomy, Zaslow *et al.* (*loc. cit.*) found no penicillin in the gall-bladder of 8 cases; in 7 of these the cystic duct was obstructed by stones while in the eight no penicillin was being excreted in the hepatic ducts. Unfortunately cholecystography, using the iodophthalein dyes, may not indicate correctly whether the cystic duct is patent. In the group in which penicillin was present in the gall-bladder and 4-14 hours elapsed between administration of the drug and cholecystectomy, the findings showed that the drug was neither much concentrated nor rapidly absorbed or excreted. The same applied to streptomycin.

The prospect of cure by chemotherapy in acute or chronic infections of the biliary tract is therefore, not very bright, since neither penicillin nor streptomycin, nor presumably sulphonamides, will be excreted in the bile in significant amount if there is intrahepatic or extrahepatic biliary disease. Moreover, concentration in the gall-bladder will depend on patency of the cystic duct, which cannot be relied on in the type of patients among whom chronic typhoid carriers are usually found.—*Lancet*, **1**:564, 1947.

Folic Acid as a Therapeutic Agent

Davidson and Girdwood (*Brit. M. J.*, **1**:587, 1947) give an account of the results of treatment with folic acid of (*a*) 16 cases of pernicious anæmia, (*b*) 5 cases of refractory megaloblastic anæmia, (*c*) 10 cases of the sprue syndrome, (*d*) 3 cases of subacute combined degeneration of the cord, (*e*) 5 cases of aplastic and hypoplastic anæmia, (*f*) 9 cases of leuco-

penia, (*g*) 9 cases of thrombocytopenia, and (*h*) 5 cases of ulcerative colitis.

A hæmopoietic response was obtained only in the cases in which the bone marrow was megaloblastic *i.e.*, cases in groups (*a*), (*b*), and (*c*).

No therapeutic changes were obtained in cases of aplastic anæmia, leucopenia, or thrombocytopenia.

In the sprue syndrome folic acid controlled the diarrhœa and produced general clinical improvement in adult patients suffering from tropical sprue and idiopathic steatorrhœa. Folic acid by itself seldom restored the blood level or blood picture to normal. In none of the cases of cœliac disease was any hæmatological or clinical improvement noted.

The clinical and sigmoidoscopic appearances in 5 cases of idiopathic ulcerative colitis were unaffected by folic acid therapy.

Pressure at the Cervico-Brachial Outlet

The conception of costoclavicular compression as a common cause of either nervous or vascular pressure effects is powerfully challenged by Telford and Mottershead (*Brit. M. J.*, **1**:325, 1947) in an article which is a model of careful, painstaking, and patient observation. They base their views on the findings at 120 operations for the relief of pressure on the neuro-vascular bundle of the arm; on the effects of posture of the arm and shoulder girdle on the radial pulse in 120 medical students; and on the evidence obtained by the dissection of 30 cadavers. The characteristic thoroughness of observation at this large series of operations (in only five of which no adequate cause was found) and the careful examination of controls both living and dead give great weight to their conclusions. Telford and Mottershead agree that in a small proportion of cases the clavicle can compress the neuro-vascular bundle against the scalenus medius or an accessory or abnormal rib, but only with the shoulder forcibly retracted backwards or the arm fully elevated. In other positions they regard the idea of costoclavicular compression as "pure supposition unsupported by any anatomical evidence". Depression of the shoulder by traction on the dependent arm may obliterate the radial artery, but it does not obliterate the first stage of the axillary artery. It is clear then that the clavicle is not the compressing agent. The point is further made that when the shoulder is depressed the clavicle moves downwards and forwards so that the costoclavicular space is widened, not narrowed. The compression occurs distal to the clavicle and is considered to be due to an anatomical disposition of the axillary artery in some individuals—perhaps a majority—which allows it to be squeezed between the lateral and medial heads of the median nerve when the shoulder is depressed. Symptoms referable to the plexus with the arm in this position are caused by stretching of the plexus over an accessory rib, an abnormal first rib, or the anterior edge of the scalenus medius. The lack of reference to the scalenus anticus is of interest in view of the fact that it has often been regarded as a causal agent in America and at one time in this country.

This paper marks another welcome step forward in the elucidation of causes of pressure at the cervico-brachial outlet. The authors emphasize, as indeed do nearly all recent writers, that no one mechanical cause can explain all cases. It is possible moreover that there are a number of factors responsible in every case. Obviously, therefore, no one method of treatment, and particularly no one operation, is applicable to all patients. If the symptoms do not settle with rest and simple conservative measures and remain sufficiently disabling, operation is justifiable. There is much to be said for an exploration as thorough as Telford's so that the precise cause of the pressure on nerve or artery can be seen and dealt with appropriately. In this way disappointments from operations applied as a routine to all patients would be avoided. Division of the anterior scalene is a temptingly easy procedure. But the results of this operation are almost as uncertain as the ætiological role ascribed to this muscle. Furthermore, adequate exposure and careful demonstration of the site of the pressure might prove it often unnecessary to do more than divide part of the medial scalene, which is a formidable enough operation, rather than resect part of the first rib.

The briefest survey of the literature reveals the complexity of the problem and the variety of factors responsible for pain radiating down the arm from the neck and shoulder. Nowadays it should be possible to decide before treatment whether the site of nerve constriction is within or without the spinal column. It is perhaps wise to stress the need for careful clinical examination and for comprehensive radiography of the cervical spine and shoulder girdle. It may well be that venograms will prove an increasing help. Much remains to be solved, particularly about the ætiology of vascular thrombosis and the mode of involvement of the sympathetic nervous system. It is to be hoped that Prof. Telford and his co-workers will be able to throw further light on these still dark corners of a subject which he and his Manchester colleagues have done so much to illuminate now and in the past.—*Brit. M. J.*, **5**:325, 1947.

A New Treatment for Post-operative Pulmonary Atelectasis

Grandstaff (*Arch. Surg.*, **51**:237, 1945, Ref. *Brit. M. J.*, **1**:386, 1947) has recently reviewed the respiratory complications in a series of 2,704 operations at the Kansas City General Hospital. Some of his figures are surprising; for instance, in a series of 19 patients anæsthetized with nitrous oxide-ether sequence there were 10 cases of post-operative pneumonia, with 2 deaths. The mortality from pneumonia in 100 cases anæsthetized with cyclopropane-ether was 1% and in 102 receiving spinal anæsthesia and nitrous oxide it was 3% The total incidence of respiratory complications in the whole series was 2·6% and of pneumonia 1·8%; and of the 51 patients with pneumonia 24 died. Grandstaff points out that high oxygen concentrations in inhalational anæsthesia, as are employed with cyclopropane, favour the occurrence of atelectasis; and it is his practice to give nitrous oxide during the last few minutes of cyclopropane anæsthesia to minimize this effect. He claims dramatic results in post-operative atelectasis, before pneumonic changes have occurred, from the application of 5% to 10% cocaine to the pharynx and pyriform sinuses as if in preparation for bronchoscopy. He states that the effect is not produced only by the stimulation of cough, because the same results were not obtained by merely applying a swab moistened with saline solution to the throat. He presents reports of five cases in which a post-operative atelectasis cleared up dramatically after this procedure had been tried, and states that since he introduced this method it has not been necessary to resort to other procedures for the relief of the atelectasis. It is clear that the evaluation of a procedure which inevitably produces severe coughing as a treatment for atelectasis is difficult. The author suggests that cocainization of the throat acts by producing a reflex relaxation of the bronchial musculature, and although this explanation

may seem a little far-fetched it is at least feasible. The method seems to be worth a trial.

Streptomycin for Urinary Infection

Adcock and Plumb (*J.A.M.A.*, **133**:579, 1947) write that streptomycin has been used in the treatment of 11 patients with urinary tract infections due to Gram-negative bacilli which had failed to respond to treatment with sulphonamide compounds or penicillin or a combination of the two.

The 5 patients with infections due to organisms of the Aerobacter group obtained prompt relief of symptoms, pyuria disappeared and the urine become and remained sterile. These organisms were extremely sensitive to streptomycin *in vitro*.

The 5 patients in whom Pseudomonas aeruginosa was present alone or in combination with other bacteria experienced relief of symptoms, and pyuria diminished or disappeared. These effects were often temporary, and bacilluria persisted in each case. These organisms were fairly resistant to streptomycin *in vitro*.

In several instances the strains of bacteria which were isolated after therapy were much more resistant to streptomycin *in vitro* than were the strains (presumably the same) which had originally been recovered.

Streptomycin promises to be a useful adjunct to other chemotherapeutic agents in the treatment of certain resistant infections involving the urinary tract.

Tetanus a Preventable Disease

Glenn (*Am. Surg.*, **124**:1030, 1946) writes that the protection of the American soldier against tetanus by active immunization with tetanus toxoid during World War II is one of the most successful projects yet demonstrated in the field of preventive medicine. The high incidence of the disease among the civilian casualties in the battle for Manila (1945) is evidence that danger exists for the unimmunized. Present day mortality rates indicate that the disease is best controlled by prevention rather than treatment of a curative nature. Immunization of all school children with tetanus toxoid should result in a decrease in the number of deaths that occur each year from the disease.

Psychosurgery for Relief of Unbearable Pain

Watts and Freeman (*J. International College of Surg.*, **9**:679, 1946 Ref. *J.A.M.A.*, **133**:891, 1947) write that among the 360 patients with nervous and mental disease on whom they performed lobotomies there were some whose complaints of pain appeared excessive. Following lobotomy not only was there a disappearance of the anxiety, apprehension and nervous tension but the unceasing complaints of pain were no longer heard. This led the authors to employ psychosurgery for the relief of unbearable pain. Six of the 9 patients presented had mental disorders. All of these complained of severe, unbearable pain. Three of the 6 had demonstrable organic disease but the complaints were out of proportion to the condition. The other 3 had no organic disease. The authors also present 3 patients with severe pain due to radiculitis, carcinoma of the rectum and tabes dorsalis. They conclude that when unbearable pain is one of several symptoms in a mental disorder the complaints of pain disappear along with the nervous reactions following prefrontal lobotomy. When pain due to organic disease becomes unbearable (the disease itself being incurable) and fear of pain becomes as dreadful as pain itself, prefrontal lobotomy is indicated. Psychosurgery alters the individual's reaction to pain without materially changing his ability to feel pain. Pain may be present but when divorced from its implication—the threat to his security and fear of disability and death—it then becomes bearable and may be accepted with fortitute.

Autonomic Nervous System in Ocular Diseases

Harrington (*Am. J. Ophth.*, **29**:1405, 1946) discusses the ocular manifestations of dysfunctions of the autonomic nervous system: central angiospastic retinopathy, ocular changes in Raynaud's disease, amaurosis fugax, migraine and commotio retinæ. Typical case reports of each condition are presented. It is emphasized that the differences between amaurosis fugax, central angiospastic retinopathy and Raynaud's disease are only of degree. Migraine is a cerebral vasospastic disturbance with predominant ocular symptoms. Commotio retinæ, which embraces all conditions producing retinal œdema from chemical vasomotor disturbances, is a local rather than a general autonomic response. Psychic trauma in a susceptible individual can produce as profound organic changes as extremes of temperature, anoxemia or direct physical trauma.

Changes in Visual Fields

Lyle (*J.A.M.A.*, **133**:517, 1947) writes that another aid to the diagnosis of intracranial lesions, possibly of greater importance, is a thorough study of the visual fields. Here again the examination may be negative, but it should be pursued routinely and with care. When defects in the visual fields are found they may frequently aid in determining the location and nature of a lesion and its activity and prognosis.

By way of generalization, in reference to defects in the visual fields, the following observations may aid in developing and supporting the proper diagnosis.

A. *Locations*

1. Inflammations are found chiefly forward in the retrobulbar optic nerve.

2. Tumors, especially neoplasms, are more frequently located in the area of the optic chiasm.

3. Vascular lesions more frequently affect the radiations and cortex.

However tumors, inflammations, degenerations and vascular disturbances may involve any part of the visual system.

B. *Onset*

1. Inflammations usually produce fairly rapidly changing fields. The chronic infections show less rapid changes but rather a slow gradual increase. Multiple sclerosis produces a rather rapid defect in the field frequently relative in character, which may, and usually does, disappear within a short time.

2. Tumors, usually neoplastic, grow relatively slowly. So do aneurysms, which, before rupture, act as do tumors. Abscesses, tuberculomas and gummas are usually more rapid in their development and are usually accompanied by inflammatory symptoms. Hæmatomas from trauma, bleeding tumors and ruptured aneurysms and other vascular disturbances are rapid in the production of loss in the visual fields.

3. Vascular diseases are frequently instantaneous but, as in the case of thrombosis, may give a few days' warning by producing relative and intermittent defects in the visual fields before the circulation shuts down. Hæmorrhages and emboli are instantaneous.

C. *Duration* (prognosis)

1. Inflammations, as a rule, have a tendency to subside, so that the prognosis is relatively good. There is less chance of improvement the longer the defect in the field persists. Finding and eliminating the cause of the inflammation in time is an essential factor. Multiple sclerotic fields have a tendency to disappear in one location but may appear elsewhere. Defects in the visual fields from cerebrospinal syphilis do not, as a rule, improve but usually progress.

2. Tumors show gradual progress in changes in the visual fields unless the pressure is removed. They produce defects in the visual fields both by direct pressure on the nervous elements and by pressure on the nutrient vessels supplying these elements.

3. Vascular lesions behave according to type. There may be some improvement in cases of hæmorrhage when absorption or surgical evacuation has removed the pressure. In the cases of thrombosis and embolus, if the blood supply cannot be reestablished the defect remains.

Nutritional Amblyopia in Liberated Prisoners

Bloom and others (*Am. J. Ophth.*, **29**:1258, 1947) present the clinical picture of American soldiers liberated after an extended confinement in Japanese prison camps under conditions of severe malnutrition. The study was done on 33 soldiers captured in April and May 1942 on Bataan and Corregidor and liberated in early 1955. The development of early symptoms was observed by one of the authors while prisoner. The residual findings were observed by the other two collaborators while the patients were hospitalized in an army eye centre in the United States. During the period from liberation to arrival at this eye centre the patients had received an adequate diet and supplemental vitamin therapy and had returned to approximately their normal weight. Malnutrition due to a deficient diet can cause an optic atrophy manifested by defective vision, scotomas and pallor of the nerve head. The deficiency seems to be due to a lack of vitamin B, since the diet was highly deficient in this vitamin. The symptoms occurred coincidentally with beriberi and were relieved by thiamine when administered in the early stages of the deficiency. If treatment is not instituted early enough the condition becomes irreversible, as witnessed by the lack of improvement after administration of intensive vitamin therapy at the army eye centre in the United States. Peripheral neuritis and optic atrophy were the only residual abnormal findings made at the eye centre on patients who had suffered severe malnutrition over a period of year.

Inequality of the Pupils

Turner (*Brain;* **68**:98, 1945) writes that pupillary inequality is a common clinical finding which may or may not have diagnostic significance. The fact that affections of both the sympathetic and parasympathetic systems cause anisocoria adds to the difficulties of the clinician; and the problem may be complicated by the possibility of local abnormalities in the iris itself, the innervation being intact. Accurate clinical testing requires standard conditions of illumination and measurement—far from simple provisions.

The problem can be studied by the method of collyria (the use of eye drops) whereby the duplex nerve supply of the iris can be either stimulated or inhibited. The author used a solution of 4 per cent cocaine in 1:1000 adrenaline. Four drops are instilled into each eye at half-minute intervals. Then every fifteen minutes the size and equality of the pupils are noted as well as their reaction to light and accommodation. Five readings are taken. The author's series was made up of fifty normal controls and sixty-six heterogeneous cases of anisocoria. This test was of assistance not only in bringing out latent inequalities of pupil but also in determining their morbid anatomical nature. A partial third nerve paresis without external ophthalmoplegia was found to be the commonest cause of anisocoria after a recent head injury.

This test helps the clinician in three sets of circumstances: (*a*) where the side of the lesion is known the cause of the the pupillary inequality can be determined; (*b*) where the side of the lesion is obscure but the system involved is known the nature of the lesion can be determined with confidence in cases of well-marked oculor-motor palsy, and of long-standing oculosympathetic affection. In both these conditions the difference in size of the pupils is increased, but in the former the pupils remain circular and respond by dilatation, while in the latter the affected pupil becomes small and irregular.

Pethidine in Labour

Barnes (*Brit. M. J.*, **1**:437, 1947) give in the following lines the summary of her observations:

The results of the administration of pethidine in labour to 500 patients—479 primigravidæ and 21 multiparæ—are given. There was no maternal mortality. Eleven mothers noted slight toxic symptoms.

The fœtal mortality was 16 stillbirths (3·2%) and 5 neonatal deaths (1%). Signs of asphyxia were noted in 55 infants; recovery occurred in all. Pethidine may have contributed to slight respiratory depression in a few cases.

Good analgesia was experienced by 55% of mothers. Failures may be accounted for in some cases by the fact that pethidine was given too late in labour. Amnesia was obtained in only 10%. Pethidine given alone does not appear to lead to amnesia.

Some relief of symptoms, chiefly in the form of analgesia or of sleep, and a feeling of restfulness and relaxation were experienced by 87% of the patients.

No effect on uterine contractions was noted in 67%. In 23·3% contractions appeared to increase, while in 8·7% they appeared to diminish.

The duration of labour was compared in primigravidæ with a control series of patients delivered in 1939. It was found that the first stage was seven hours longer in patients receiving pethidine. This may be due to other factors, but the claim that pethidine shortens the duration of labour cannot be substantiated.

The forceps rate was 9·2% comparing favourably with a rate of 7·8% for the year 1939, since the series receiving pethidine contained a high proportion of primigravidæ.

No tendency to post-partum hæmorrhage was noted.

Pethidine was used for premedication for cæsarean section in 32 cases. There was no maternal or fœtal mortality.

As a result of this investigation pethidine is compared as an obstetric analgesic with the ideal criteria laid down for

such an agent by Sturrock (1939). Although pethidine does not fulfil all his criteria it is suggested that it approaches the ideal more nearly than any other obstetric analgesic drug in current use.

It is not suggested that pethidine is necessary in every labour. It is well known that many labours are relatively painless and that much can be done for the patient by encouragement, allaying nervousness, and by the practice of relaxation. These facts are well known and everything must be done to apply them. There are still many cases in which there is real distress. Pethidine helps such patients by allaying suffering and by inducing sleep or restfulness. It is suggested that 100 mg. of pethidine be given by injection as soon as the uterine contractions are causing distress. This dose may be repeated in one hour if necessary and thereafter as required. Chloral hydrate given in addition has appeared to enhance the effect. For the later stages inhalational analgesia in the form of nitrous oxide and air or oxygen or trilene may be used if necessary. This combination will give relief in the majority of cases and is simple and safe.

Diet to Prevent Toxaemia of Pregnancy

Luikart (*Am. J. Obstet. & Gynec.*, **52**:428, 1946) studied the effects on 1,000 pregnant women of a regimen of rigid weight control without interfering with adequate nutrition. The immediate objective was restriction of the total increase of weight to 16 pounds or less during pregnancy, and a maximum of 2 pounds in any one month. All the patients were within normal weight range when first seen. A gain of more than a pound in two weeks calls for reduction, not in the proteins and cooked vegetables, but in the quantity of such foods as ice cream, candy, pastries, cereals, macaroni, cheese, corn, potatoes and bread. The 1,000 patients whose weight was controlled by a restricted diet (high protein, low caloric diet) did not develop toxæmia, preeclampsia or eclampsia. Maternal deaths did not occur. Patients following a prescribed diet high in protein have less anæmia, less œdema and less tendency to develop toxæmia or eclampsia. The fœtal mortality rate in this series was one-sixth the fœtal mortality of an uncontrolled group. Large babies were not observed.

Pneumonitis in Rheumatic Fever

Griffith and others (*Am. J. Med. Sc.*, **212**:22, 1946) define pneumonitis as a manifestation of rheumatic fever characterized by an inflammatory process of lung and pleura, with an insidious onset, migrating consolidation and frequent pleurisy with or without effusion. They observed pneumonitis in 19 of 1,046 rheumatic fever patients at a naval hospital. The pneumonitis is of three types according to its time of appearance in the rheumatic fever state: primary acute, secondary acute and subclinical. The diagnosis of pneumonitis of rheumatic origin is based entirely on the exclusion of the other types of pneumonia and the concomitant development of other manifestations of acute rheumatic fever. The laboratory aids are of little help in establishing the diagnosis. The rapid shift of areas of density in the rœntgenogram, the rapid development of an effusion and the close adherence of the density to the bronchovascular markings are helpful in differentiating this condition. Pneumonitis is a serious manifestation of rheumatic fever activity.

CURRENT TOPICS

MEDICAL PROBLEMS

Prof. B. N. Ghosh, M.B.E., F.R.F.P.S. (GLAS.), F.R.S., (EDIN,), President of the Bengal Branch of the Indian Medical Association in addressing the members on 30-3-47 said:

There are so many vital matters which require our careful consideration that it will be invidious to select one from the other. It will not be out of place, however, to review the general health condition of the people of Bengal.

State of Public Health in India

It may be said in general that the state of public health in India is very much inferior to any other civilized country. Apart from diseases common to other countries, India is subjected to certain special diseases which take a large toll on the general population, leaving aside the condition of malnutrition and other adverse factors which lower the resisting power of the people and make them easy victims to infection. These are mostly due to bad sanitation, want of good water supply and bad housing conditions. Certain preventible diseases, notably malaria, cholera, dysenteries, enteric fever, small-pox and tuberculosis are responsible for the major portion of deaths. Although lack of education, proper appreciation of sanitary laws and certain prejudices may have an adverse effect on the health of the people, the fact remains that sanitation in general has not reached that level of efficiency in all its aspects in this country to cause an appreciable reduction of the different preventible diseases which have mostly been eliminated in most advanced countries of the world.

But before any tangible result is expected it is necessary to realise that any health measure, however beneficial, to be successful should be so planned as will cause an improvement of the economic status of the masses. When about 90 per cent of the population are illiterate and most of them live on a subminimal diet for their bare existence and cannot clothe themselves properly against inclemencies of weather and other adverse conditions, any attempt to improve the health and sanitation will not yield much fruitful result unless, side by side, a well-thought out planning is done for the improvement of the economic status of the masses.

The next important point is to find out wherein lies the difficulty in the application of sanitary measures. These are generally ignorance, indifference, conservatism and prejudice against interference with the personal liberty and comfort. Legislative measures will not solve the problem until and unless the public and the ignorant masses, appreciate the value of such measures. Too often measures for the benefit of the people cannot be made popular or successful owing to the want of tact on the part of the officials concerned, specially those who come in direct contact with the people. Often these men alienate the public and measures however beneficial become unpopular. These can only be got over by education, health propaganda, co-operation and mutual understanding between the public, the health workers and the general medical practitioners so that they can take a keener interest both in helping to frame and develop public health activities. This presupposes that officers from the highest to the lowest whether belonging to the Government, Municipality, District Board etc. should shake off their complex and consider themselves as one of the public if real success in this direction is to be achieved.

The idea that public health is solely a matter for sanitarian, municipalities or the health department of the government should be removed and the machinery should be so organised that not only medical men but every citizen may take a direct interest in the preservation of health and welfare not only for themselves but for the community as a whole.

I have given you a dismal picture of the health condition of the people. Here I think medical men and for that matter our Association can do much. But there are certain obstacles. I find that any help which we as members of the Association wish to render we cannot do so individually or even collectively unless the Government will co-operate with us. So far this co-operation has not been forthcoming. For, however much we may like to associate ourselves to solve the different complex health problems with the Government it has not been accepted in every case. Possibly we have not been able to impress on the Government the sincerity of our help, or perhaps we are looked upon with suspicion, but why this should be I do not know. I am however a great optimist and I am sure things will change and are changing and before long we will be called upon to help and shape the health policy of the Government.

This brings me to the question of how far we will be able to take up the responsibilities. In a free India medical men will have to play a large part. So far we have been accustomed to follow what we have been asked to do, *i.e.* we used to take orders and not give orders. It lies with you to train yourself and change your outlook so that you may be able to shoulder the responsibilities in different spheres which perforce will fall on you. Are we paying our attention in this direction?

Health Survey and Development Committee

You are all aware that recently the Health Survey and Development Committee which consisted of some of the best talents of India have after very careful survey of the health conditions of India in their different bearings published their report which deserve our careful study. And although we may not agree with all their findings or recommendations, it must be admitted that they have given us sufficient material to utilise them to our best advantage. I do not know how far the different Provincial Governments are willing or competent to give effect to their recommendations. I hope however that at least a beginning will be made in this direction.

One of the important causes for the bad state of health which this committee have pointed out is the paucity of adequate medical help. This will be evident from the following table which gives some idea of the health personnel in India as compared with the United Kingdom:—

Class of personnel	*Number*	*Rrtio of No. in col. 2 to present population*	*Existing ratio in the U.K.*
Doctors ..	47,400	1 : 6,300	1 : 1,000
Nurses ..	7,000	1 : 43,000	1 : 300
Health visitors	750	1 : 400,000	1 : 770
Midwives (qualified) ..	5,000	1 : 60,000	1 : 618
Pharmacists ..	75	1 : 4,000,000	1 : 2 Doctors
Dentists ..	1,000	1 : 300,000	1 : 2,700

The question therefore which every thoughtful Indian will have to consider is how to rectify the defect. How to increase the number of qualified medical men, nurses, pharmacists, dentists and health visitors.

According to this Committee to reach the proportion of doctors to the ratio of 1 to 2000 which they envisage will require 185,000 medical men and this figure they calculate will reach in 1971. I do not know how this figure can be reached in 1971. We had in Bengal two medical colleges and nine medical schools teaching up to the standard of the State Medical Faculty. Two of the schools, namely that of Dacca and the Campbell Medical School of Calcutta are being raised to the standard of the college. It is proposed to raise other medical institutions both Government and private to the standard of the college affiliated to the University. It stands to reason that once an institution is raised to the status of a college the number of admission will be less and the number of passes at the final examination will be still less. Certainly all the nine medical schools will not be converted into colleges for various reasons and even if they are so converted the number of admission in all the future colleges will be considerably less than the number of students who are getting medical education at present in all the colleges and schools. If that be the position I fail to understand how we are going to solve the problem of supplying larger number of medical men. The problem to me appears to be very complex and beset with good deal of practical difficulties.

We do require a large number of qualified medical men and certainly with the present expenditure in medical education, the amount of time and labour spent in it and the number of candidates coming out each year it is well nigh impossible to solve the problem. What is the solution then? If I say retain the licentiate class I am sure I will be hailed as a reactionary who wants to perpetuate the caste system in medicine. Far be it from me if I have any such intention. What I have in mind is the supply of medical men well trained in the art of medicine and who will settle in rural areas and will be content with a small income.

Is it not possible to arrange medical education cheaper and at the same time impart sufficient training in four years? I am fully conscious of the reason why the present licentiates are so much dissatisfied and want to be made graduates. It is because of the artificial barrier. They have been classed as so-called untouchables. They are not allowed ordinarily to aspire for the posts which the graduates can occupy even though the licentiates as man to man may be very much superior. If this disadvantage is removed and the licentiateship examination satisfied the minimum requirements of the Medical Council of India and they are recognised by the Medical Council of India I have no doubt there can be any objection in retaining this class of medical men. The qualification for entering medical education must be I.Sc. and there should not be any handicap for these men to aspire for any post-graduate qualification.

This brings me now to the consideration of medical education as it exists today. It may be said without fear of contradiction that the present system of medical training as is being imparted in the different medical institutions requires careful consideration, perhaps thorough overhauling. The system now followed is nothing but an imitation of what is

being adopted in the United Kingdom without considering how far these are applicable to this country. It may be interesting to know that in America they generally turn out medical men after four years of training with one year's additional clinical work in the hospital after the final examination. This they have been able to do by drastic pruning. The teaching of anatomy and physiology is done in six months to one year. It has become possible because those who are interested in medical education have been able to cut down subjects which are not absolutely necessary without at the same time sacrificing anything important. One finds no such effort made in this country.

At present more attention is paid to theoretical teaching and laboratory findings than on clinical findings. In a country like India, where facilities for laboratory and other aids to diagnosis are not always available except in a few towns and cities and even where such facilities are available they are beyond the means of the bulk of the people, it is necessary that the students should get a more thorough and sound training in clinical diagnosis which unfortunately is lacking in modern teaching. While every effort should be made in teaching scientific methods of approach there is no justification in neglecting or laying less emphasis on the clinical methods of examination. In a qualifying examination the aim should be to find out whether the student will make a good doctor. But unfortunately we want to see that each and every one of them becomes specialist in the subject he is examined.

It may not be out of place to quote here what Dr. E. M. R. Walshe said about medical education as it exists in England.

"It is nowhere denied that we ask impossible tasks of students, who are bewildered by hours of listening, and that we stamp out the habit of reflection by a ceaseless drill. And this is done in the name of education. So strange an anomaly may set us thinking how we are come to such a pass. The blunt truth would appear to be that the handling and revision of the curriculum are based on a misconception of what we can and ought to attempt in a medical school. The one purpose of the student's years is, it seems, not to train and test habits of thought, but to collect and store a set of facts, as squirrels hoard the nuts on which they hibernate. It may be conceded that such a policy was reasonable when medicine was a slowly progressing science that did not greatly alter in a man's lifetime. Today it leaves him bankrupt when he has scarcely begun. The little he knows is soon antiquated, and he cannot keep up with a rapidly changing science, for we have so contrived to educate him that he cannot educate himself. We trust neither his industry nor his capacity. He must be driven into different pens for every hour of the day, along with a drifting flock that presses now this way and now that. And this, if I may be allowed to change a metaphor, in the hope that he may one day recognize a disease because he has seen it before.

It is the fundamental defect of our teaching that we have not given the student a firm grasp of general principles. We have not taught him to weigh evidence, to discriminate or to think logically, and we have too often failed to imbue him with that keen desire for understanding that is the essence of true education. We have been content to preoccupy him with feats of memorising and with the acquisition of an increasing number of techniques."

These are wise words and all of us interested in medical education should ponder over this and see how to rectify the defects.

Post-Graduate Training

It is regrettable that notwithstanding repeated demands from this Association and by medical men there is no arrangement for refresher course with the result that a medical man who is not attached to a teaching institution very soon finds himself in a most unenvious position having lost all contact with current advances. I have known of many medical men who are anxious to gain knowledge but cannot do so for want of any such facilities in any of the colleges in Bengal. How long are we going to tolerate such things? Because of this deficiency our young men have to go outside India either to take refresher course or some post-graduate diploma. This is only possible with those who can afford the expenses which training in a foreign country necessarily involves.

Honorary Staff

I wish to say a few words regarding appointment of honorary men in different Government and Private Institutions. Much can be said both for and against this practice. It is not fair that Government should exploit these honorary officers on the plea that being attached to the different hospitals they are gaining experience and incidentally making good the financial loss by private practice by virtue of their position. In private institutions the position is different. Their funds are small and limited and they cannot afford to pay any remuneration to the senior members of the staff. It must be said in all fairness that these men should be paid for the work. After all they are professional men and they have to earn a living, consequently the amount of time and labour necessary cannot be given if they have to find other means for earning money. One cannot therefore enforce strict attendance on these men. It is further necessary that those who are responsible for teaching should after certain intervals visit educational centres outside India, and this is not possible for honorary men in most cases. A professor who gets good pay will get leave with pay or study leave and he can visit many foreign countries which is so very necessary for efficient teaching.

It seems to me that the medical profession is poorly paid of all the other professions. Unfortunately it has become the practice to exploit the profession, specially the younger members, in getting work out of them and not even paying them a living pay whereby they can maintain their position and uphold the dignity of the profession. It is a sad spectacle to see appointments being advertised for qualified medical men on a pay of Rs. 50|- per month. Is it any wonder that the profession should degenerate. It is all very well to talk of humanitarian work, but to be human you must first live.

Recently I was pained to find that some members of the profession working as House-staff in the different hospitals going on strike. I always associated strikes with workers and labourers of a different type. Though now a days we hear of strikes amongst students and other workers but I could never think that medical men with their tradition for work should ever have occasion to resort to strikes. I quite realise that they had ample grounds to adopt this extreme step and that this step was adopted evidently after all possible means have failed. Without going into detail into this controversy regarding the justification of the strike I would only say this,

that the term of appointment for the house staff is only for six months, and if I were in that position I would have waited till the term was over and make recruitment of new staff impossible unless the grievances are rectified.

Within the last few years the Central Government have taken some important steps which will have a far reaching effect on the health and welfare of the people. The first step in this direction was the appointment of the Health Survey and Development Committee. This Committee as I have already mentioned have reviewed the whole situation in its different aspects and the report which they have published will if followed go a long way to solve some of the urgent problems which confront us. They envisage a well-developed Health Service.

I do not wish to go into detail but will appeal to all the members to carefully study the reports and see how far we as members of the Association can help for the success of the programme.

The second important step taken by the Central Government is the publication of an authoritative book—The Indian Pharmacopoeial List, which perhaps some of you know was in the making for the last two years. Though not an exhaustive list for obvious reasons, it is hoped that a National Indian Pharmacopœia will soon be compiled. But this means more intensive research and standardization of preparations before these can be incorporated in a Pharmacopoeia. This book will I am sure act as an impetus to indigenous drug trade.

The third important step which has only recently been taken is the formation of a Committee of Indigenous Systems of Medicine with Sir R. N. Chopra as the Chairman. The object of setting up the Committee is to consider and recommend the steps that should be taken to improve the facilities for research and training in indigenous systems of medicine and generally to increase their usefulness to the public. The indigenous systems of medicine include Ayurved and Unani Tibbi and with the establishment of the National Government it is only proper that an attempt should be made to encourage evolution of these system on modern scientific lines which were allowed to remain static for generations.

Before I conclude I wish to impress upon each and every one of you the importance of directing our attention to the different urgent problems which require our careful study and solution. So far our activities have been directed in a different direction to obtain certain privileges and recognition of this Association by the Central and Provincial Governments. The Indian Medical Association holds a unique position now in India and it is time that you should divert your energy to more constructive works, *viz.*, solution of such problems like medical relief, medical research, medical education and above all nutrition of the masses, which alone will demand most of your time, energy and careful thinking. Then there is the most important problem of drug supply. How to make India self supporting so far as her drug requirements are concerned. Remember that the present is a most suitable time for serious study of all these complicated problems when great changes are taking place in the constitution of India and public health is a far greater subject of statesmanship than many other questions which now loom large in the public eye. The Indian Medical Association can play a very important part in framing health programme in its different aspects suitable to our country.

NOTES AND NEWS

BRITISH EMPIRE CANCER CAMPAIGN

Sir Stanford Cade, K.B.E., C.B., F.R.C.S., in proposing the adoption of annual report said amongst other things:

The Annual Report records nearly a quarter of a century's progress in cancer research carried out under the aegis of the British Empire Cancer Campaign. Within its covers are the fruits of the labours of 21 research centres—8 in London, and 13 elsewhere in Great Britain—all subsidised by the Campaign. The Report brings to you much thought with but one aim, much endeavour with but one object—the fight against our common foe, the greatest but one, of all causes of death.

The accomplishments in research include the researches of scientists in the laboratory and of clinicians in the wards, operating theatres, radiation rooms and follow-up departments. The work of physicians, surgeons, radiotherapists, pathologists, biochemists and physicists, not in self-contained compartments but working as a team. In cancer research progress is painfully slow, of necessity, laborious and intricate. I find it easier to indicate progress over a span of years and to add to the review of this last year the work that came before, and from which it is indivisible. We are honouring today Professor Kennaway for his researches on carcinogens—substances which are cancer producing; their study has thrown light on the development of malignant growths, on their natural history and behaviour. The biochemical genius of Professor Dodds has given us a new practical weapon—the synthetic ovarian hormone, stilboestrol, and its derivatives—potent substances in the clinical control of cancer of the prostate and possibly other sites.

It is undesirable to talk about cure of cancer as it is misinterpreted and leads to disappointment, but Professor Dodds' contribution does control cancer of the prostate to a degree unknown before and, moreover, it does so by medical means, as opposed to surgical or radiological methods.

Physicists have created delicate scientific instruments which permit the accurate measurement of radiations from radium and x-rays and enable the trained clinician to direct these rays with precision and to apply them with safety both as regards the patients and the medical and nursing personnel.

Radiotherapists have perfected methods of treating cancer in certain sites—the tongue, throat, uterus, and skin, which today are universally acknowledged as the first choice in treatment.

Progress has been made in surgical treatment of internal cancer. Cancer of the lung in suitable and early cases lends itself to removal by the trained thoraic surgeon. Newer methods of operating on the bowel have widened the field of usefulness of surgery and, at the same time, narrowed its dangers.

The Campaign correlates controlled research, it provides help to individual workers in recognised centres, it disseminates knowledge, it helps to destroy the fear of cancer and so contributes to that freedom from fear without which there can be no victory. To further these aims a British Journal of Cancer is shortly to be published and a word of thanks is due to Professor Scarff, the Honorary Secretary of the Scientific Committees, for initiating this Journal and for the work he willingly undertakes in committees—to him a labour of love—to the Scientific Committees—a tower of strength.

It can truthfully be said that in cancer, in accessible sites, and some internal organs, considerable decreases in mortality are at last being registered. In other sites the peak of the rise has apparently been reached. And although in some sites,

notably cancer of the lung, the curve is still relentlessly on the upgrade, the fact that the mortality rate in cancer of the lip, the tongue, the jaw, the skin, the breast, and the uterus, is falling, constitutes an achievement which entitles us to ask in this war against cancer, is this too, "the end of the beginning".

The knowledge resulting from the study of atomic fission for war purposes has left a legacy of immense possibilities. Of great promise but, as yet, relatively unexplored are the uses of artificial radio-active substances, the beams of neutrons produced by the cyclotron, the many million electron-volt potentials of the betatron.

The British Empire Cancer Campaign is not parochial in its outlook, any research centre can appeal for its help, but through its Scientific Committees, it is in a position to know where money given to the Campaign can be expended for the best purpose.

THE ALL INDIA OBSTETRIC AND GYNAECOLOGICAL CONGRESS

The Fifth All-India Obstetric and Gynaecological Congress will be held at Bombay from the 25th to 28th December 1947.

The subjects for discussion will be:

(1) Dystocia; (2) sterility and (3) neonatal deaths; besides reading of scientific papers, demonstrations and exhibitions.

CORRESPONDENCE

The Editor is not responsible for any views expressed by the contributors

INTERNATIONAL CORRESPONDENCE BUREAU

Sir,—I on behalf of members on my waiting list—take leave to apply to you. May I ask you to put me in touch with readers of your paper interested in friendly correspondence.

Having been secluded from the outside world these long years, and yearning for a real democratic enlightenment and a personal contact from man to man across borders, my members would only too gladly welcome and answer letters from abroad. Most of my members (among them scientists, students, experts, and other well-educated ladies and gentlemen) have a fairly good knowledge of English, but would also be pleased to write in German, if desired. I am sure, my members will try and give their pen-friends every satisfaction.

Pen-friendships are a step towards the creation of that international friendship and goodwill that is so essential to understanding and peace, don't you think so?

13b München 15
Lindwurm Strasse 126/A (Miss) A. M. Braun
Germany Bavaria U.S. Zone

QUARANTINE FOR DR. QUACK

Sir,—Permit me to invite your attention as well as that of your readers to an article "Quarantine for Dr. Quack" which has appeared in *The Reader's Digest* for October 1946. It appears that drugs which cannot be sold in the United States for one reason or another can, and are being, exported to foreign countries because there is no law to prevent the export of spurious, or misbranded drugs; all that is required is only a label on the outside: "For Export Only."

(1) "A major U. S. drug manufacturer produces penicillin under contract for Army and Navy use. Federal inspectors rejected a large batch; it was faulty, might be lethal. However, the dangerous stuff, labelled "For Export Only", was shipped to South America, where it was bought up at premium prices by hospitals and physicians."

(2) "A batch of scores of thousands of packages of gauze bandage which had not been properly sterilized and was found to be contaminated was returned to the manufacturer by Government inspectors. Labels, "For Export Only" were subsequently pasted on the rejected cartons, and they were shipped at above ceiling prices to agents in Latin America."

(3) "The Knox Company, a leader among patent medicine exporters, produces some 20 medicines, and spends approximately $3000 a month in each of several important Latin American newspapers advertising claims for each drug in its "Family Medicine Chest." Among these products are "Mendaco", "Cystex" advertised as banishing kidney and bladder troubles quickly; "Formode", advertised as a safe and scientific way to lose fat, used by the cinema stars; "Vi-Tabs", also labelled "Varko", advertised to restore youthful vigor in men; "Hynox" advertised as a cure for high blood pressure, heart pains, dizziness, headaches; "Rogena", advertised a cure for prostate troubles, "a positive guarantee to end your troubles." United States drug inspectors say that these drugs are spurious, the advertising claims fraudulent."

These three excerpts should be enough to put us on our guard. Our Association should take up this question and move Government to protect the country from being dumped with such products (as a matter of fact many of the above drugs are widely advertised in our country). Government should forbid the import of any drug which is not accepted by the American Council of Pharmacy or should make it compulsory for all foreign manufacturers to obtain a Certificate from the Central Drug Research Institute of Calcutta.

Ahmedabad, K. A. Shah
15-4-47.

GET-UP OF THE JOURNAL OF THE I. M. A.

Sir,—My verbal protests having fallen on deaf ears, may I please request you for little space in your "Correspondence" column to record my profound disappointment at the unspeakable get up of this premier journal of medicine in India.

There is much room for improvement of this our one and only commendable medical journal, but for the present I shall confine my bitter comments about two points which ought to be remedied soon; and to bring home my criticisms I shall refer you to the January 1947 issue of the journal which has been just published.

1. It is a disgrace that we are still continuing the malpractice of referring the readers to several pages backwards or forwards to the concluding portions of an article. All civilized scientific journals in the world have dropped this unwholesome practice for it only caused interruption to concentration of thought, and was a constant source of irritation when one had to search through the unwieldy pages to find the appropriate columns. For example, the article on "Bone Grafting" in the January issue of our journal has been referred *forward* from page 122 to be concluded in about ½ column right in the middle of column 1 of page 131.

What is even worse, and incidentally much more annoying, is to have to refer *backwards* by several pages; for example, the article on "Staphylococcal Septicaemia" on page 121 has been continued on "page 117 at foot of column 2". Similarly, the synopsis of the "Causation of Rheumatic Fever" on page 142 has been referred backwards to be concluded in the bottom half of page 131. Again the report on "A Fatal Case Of Meningitis" on page 132 has been continued on page 131, column 2. As for the gross mutilation of page 131 itself by so many criss cross of multifarious tail ends of various articles I fail to find stringent enough words to condemn the whole page as being completely unworthy of any decent scientific journal. Can anyone possibly keep up his concentration of mind and thought in trying to read a scientific article if he has to continually go backwards and|or forwards searching for the continuity of the particular article which the poor medical man has been trying to digest?

2. Why do you allow a few pages of advertisements to appear scattered amongst the principal reading matter of the journal? It is both unkind and insulting to the profession that while, for example, reading an excellent account of "Paludrine and Malaria' on page 134 one is disturbed by a full page advertisement which reads "For Leucorrhœa—Acetarsol, Vaginal Compound, Boots, etc." Turning the page over with some measure of disgust, I discovered a couple of more advertisements about "Catazol" and "Blood-Vita" to aggravate my annoyance, before I could find what I have been really looking for, namely, page 135 of the journal to continue reading the article I was interested in.

The section on Current Medical Literature, page 136 to 152, is again spoilt by some more commercial advertisements. Are we supposed to be a body of professional people pursuing further research and seeking knowledge by reading your journal or has the J. I. M. A. become solely an advertisement medium for patent medicines? Why could not these adverts be designated their rightful place, namely, some pages at the beginning and at the end? I can understand the economic factors involved, but do not like to think that the life-blood of the journal depends on the adverts which disengage a physician's attention when he is trying to read a medical article.

I trust that, reading my letter, you are by now about as annoyed as I have been reading my journal; then only there is hope that you will be good enough to look into the causes and effect remedy. I am etc.

Calcutta, 22-5-47.

S. Chakravorti,
Staff Medical Officer, I.C.I. (India) Ltd.

The Editor appreciates the intention and sentiment expressed in the letter. Improvement of the 'profound disappointment' point no. I, was in his mind for a long time and has been remedied. The practice described under point II, is not confined to this Journal only but other 'civilised scientific journals'.—EDITOR, *J. Indian M. A.*

A PECULIAR HEADACHE CASE

Sir,—On 22nd March 1947 I went to Lady Willingdon Hospital, Jaipur for seeing the Director of Medical Services, Jaipur and had to wait a while in the Hospital Library.

Though I am a lay man but to while away the time I just picked up a journal named 'Journal of the Indore Medical Practitioners Association' Annual Number December, 1946. The organizers of this journal have appealed through this journal to the medical practitioners to subscribe as many articles and medical reports as possible to make this journal a success and popular.

I am though not a doctor but it just struck me to get published in the said journal a patient's own history in case I may be able to find some doctor who could cure my wife's severe headaches. I and the patient herself are absolutely tired of the treatments she has had from various doctors during last 20 years. And I have now come to the conclusion that her headache is perhaps uncurable. I challenge it. This challenge is equally open to Hakeems and Vaids also in case some one may happen to read this.

The following is her history:—Age 37 years, mother of 3 children. Two living. Married in 1925. Weight—Stationery, General health fair. Soon after the marriage once she fell down by missing a step which gave pain in her abdomen. It was cured by some local treatment.

She started suffering from headaches from the year about 1926 which were not severe then. Headache gradually got worse and with shorter intervals. She started getting severe headaches from the year 1935. In 1941 she got hysteria. Since 1943 the headaches became very severe and unbearable. At present she gets headaches almost every day which remains throughout the day. At times it becomes unbearable which sometimes lasts for some hours and some times it lasts for 2 to 3 days. The pain starts from the eyes. Then over the frontal sinuses and goes back to the occiput. The pain is felt as if it is moving from the eyes to the back of the skull. When the pain starts she cannot lift her head and feels nausea. Headaches are sometimes one sided, sometimes frontal, sometimes both sides. They are general. Not localised at one place.

She had the operation of granules in 1935. Since then she has been wearing glasses which were changed in 1942. No relief from the spectacles.

When she was carrying second child in 1930 she lifted a fan which displaced her uterus. The same ailment appeared when she was carrying 3rd child in 1932.

In 1932 she had an operation for removal of left tube and left ovary, there being present a twisted dermoid cyst of left ovary and a left hæmatosalpinx. Right tube was ligatured to avoid pregnancy.

She had the following drugs during her illness:

1. Calcium gluconate I.V. alternately with sodium cacodylate. 2. Hæmolaterin. 3. Abidol 'C'. 4. Elixir Val. Brome. 1. Ovocycline. 6. Vaganine. 7. Laxindon.

At present the following medicines are being tried:—

1. Syr. Trifolinum Compd. (P.D.). 2. Neurophosphates (B.C.) 3. Stearn's Bicolates.

Other present ailments—The internal examination on 28-3-47 reveals: Posterior lip erosion. Uterus retroverted, normal size. Fornices clear.

Whenever she exerts there is some discharge which is more or less watery, which disappears after rest. This also causes pain in the back and abdomen.

Menstrual period though at regular interval is accompanied with pain. At times the flow is normal. Sometimes the course is extended to 6 days. During the period the headache is aggravated. During the attack of headache the appetite and sleep are lost.

Recent results of various examinations are as follows:—

1. Urine examination
   (*b*) No growth after culture of 24 hrs.
   (*b*) No growth after Culture of 24 hrs.

2. Stool examination.
   (*a*) Only undigested starch scanty and
   (*b*) muscles fibres.
3. Blood examination
   (*a*) Kahn's Test—negative
   (*b*) Total and Differential Count
   Total Counts—5000
   Differential—Polymorph 63%
   Lymphocytes—35%
   Eosinophil—2%
   (*c*) B.S.R.—3/8 mm.
   (*d*) Blood pressure in 1944—
   Sys. 100 mm. Dias. 75 m.m.
   (*e*) M.F.—Faint opalescence (6-4-47).

Note:—Even now blood pressure is low.

Jaipur — I am etc.
6-5-47. — RAM SINGH

The Journal does not advise correspondents with regard to prescriptions, diagnosis etc. as any such action would constitute a breach of medical ethics. This letter is published for the medical profession to elicit opinion and discussion. Fuller investigation and a report from the medical attendant would have been helpful. The history of the case is interesting and instructive, more so because ordinary methods of treatment have failed to relieve the headache—EDITOR, *J. Indian M. A.*

REVIEWS

DISEASES SPREAD BY CINEMA AND THEIR CONTROL—by G. D. Srivastava, 1946. pp. iii+85. Published by the author, Lucknow, Price Rs. 2/8.

The name of the book suggests the contents but the author says, "One need not feel panicky and nervous when going to see a picture". In it he describes diseases spread during the exhibition of a film. So for the moment he leaves the discussion of (a) diseases spread during the production of a film (*b*) diseases affecting the operator and staff (*c*) physical injuries which people often get when there is a rush at the ticket window! The discussion is confined to the crowd inside a cinema-hall. In eleven chapters diseases which may affect a cinema fan is enumerated. Diseases spread by droplet infection mark the beginning. The author then proceeds to describe insect borne diseases such as yellow fever, kala azar, plague, typhus fever—and even trench fever. In describing the venereal diseases, he thinks that a film stimulates sex instinct of the audience and they may resort to gratify the sexual passions and thus get venereal diseases. We think some of the diseases do not come under the title of the book. In the last chapter the author has made some constructive suggestions to improve cinema halls, which should be insisted on by the licensing authorities and municipalities. Two recommendations may be immediately enforced *e.g.* forbidding smoking and ensuring proper ventilation. Cinema is a recreation which the public may demand to enjoy in comfort.

The illustration on the dustcover does not fit a scientific treatise.

B. P. NEOGY

EXTENSILE EXPOSURE APPLIED TO LIMB SURGERY—by A. K. Henry, 1945. Royal Medium 8vo. pp. 186 with illustrations. Published by E. & S. Livingstone Ltd. 16 & 17 Teviot Place (Edinburgh). Price 30*s.* net.

This novel and compact little book has proved its worth to those engaged in limb surgery. Long before publication of this volume, Mr. Henry's methods of exposure became familiar to surgeons through the medium of current literature and they have had ample opportunities to verify their usefulness almost every day. This book presents Mr. Henry's views and methods in a collected form and will be of great help, especially to surgeons who have to tackle many casualty cases. The author should be congratulated upon having secured the help of a first-class "anatomical artist", something which is so difficult to find but which helps so much to elucidate a point or bring home a method to the readers.

Some details like finding the line of cleavage by moving one muscle cross-wise upon another, by finger palpation, etc., will no doubt be of help to those new in the field. Older craftsmen have possibly learnt the trick unconsciously.

While going through the book, one is inclined to wish for two things:

Firstly, a brief resume of other classical methods with criticisms where necessary, would have helped the readers to grasp the merits of Mr. Henry's methods more clearly. Alternative methods of exposure which are equally suitable in particular cases, might have been mentioned with advantage. For example, Kocher's method for exposure of the whole radius, etc.

Secondly, the author's strong inclination towards rhetorics in his language and his ample quotations from the classics would seem to go slightly over the head of the average matter-of-fact surgeon. One cannot help wishing a scientific treatise to steer clear of poetical ecstasies.

K. C. S.

THE PROBLEM OF LUPUS VULGARIS—by Robert Aitkeen, 1946. Demy 8 vo. pp. 80, with illustrations, some in full color. Published by E. S. Livingstone Ltd., 16 & 17 Teviot Place, Edinburgh. Price 15*s.* postage 4*d.*

The book comes from the pen of one who had a wide experience on the disease for the last 30 years and will be of great help to one interested in the subject. The illustrations are all personal and add to its clinical value.

P.G.

A PRACTICAL HANDBOOK OF MIDWIFERY AND GYNÆCOLOGY—by W. F. T. Haultain and Cliford Kennedy, 1946. Third Edition. Demy 8 vo. pp. 400 with illustrations. Published by E. & S. Livingstone Ltd., 16 & 17, Teviot Place, Edinburgh. Price 15*s.* postage 8*d.*

The authors should be congratulated for putting in so clearly and in such a concise form all the principles of modern obstetric and gynæcological practice. It will be of great use equally to students as well as general practitioners.

P.G.

DEMONSTRATIONS OF OPERATIVE SURGERY FOR NURSES—by Hamilton Baily, 1945. Demy 8 vo. pp. viii+348, 531 illustrations, many in color. Published by E. & S. Livingstone Ltd., 16 & 17, Teviot Place, Edinburgh. Price 21*s.* Postage 8*d.*

The book written by a born teacher and an able writer, well-illustrated as it is, is not only an essential for all students of surgical nursing but may be valuable as an aid to operative surgery for medical students while doing hospital work. Both the author and the publisher should be congratulated for bringing up this excellent book.

P.G.